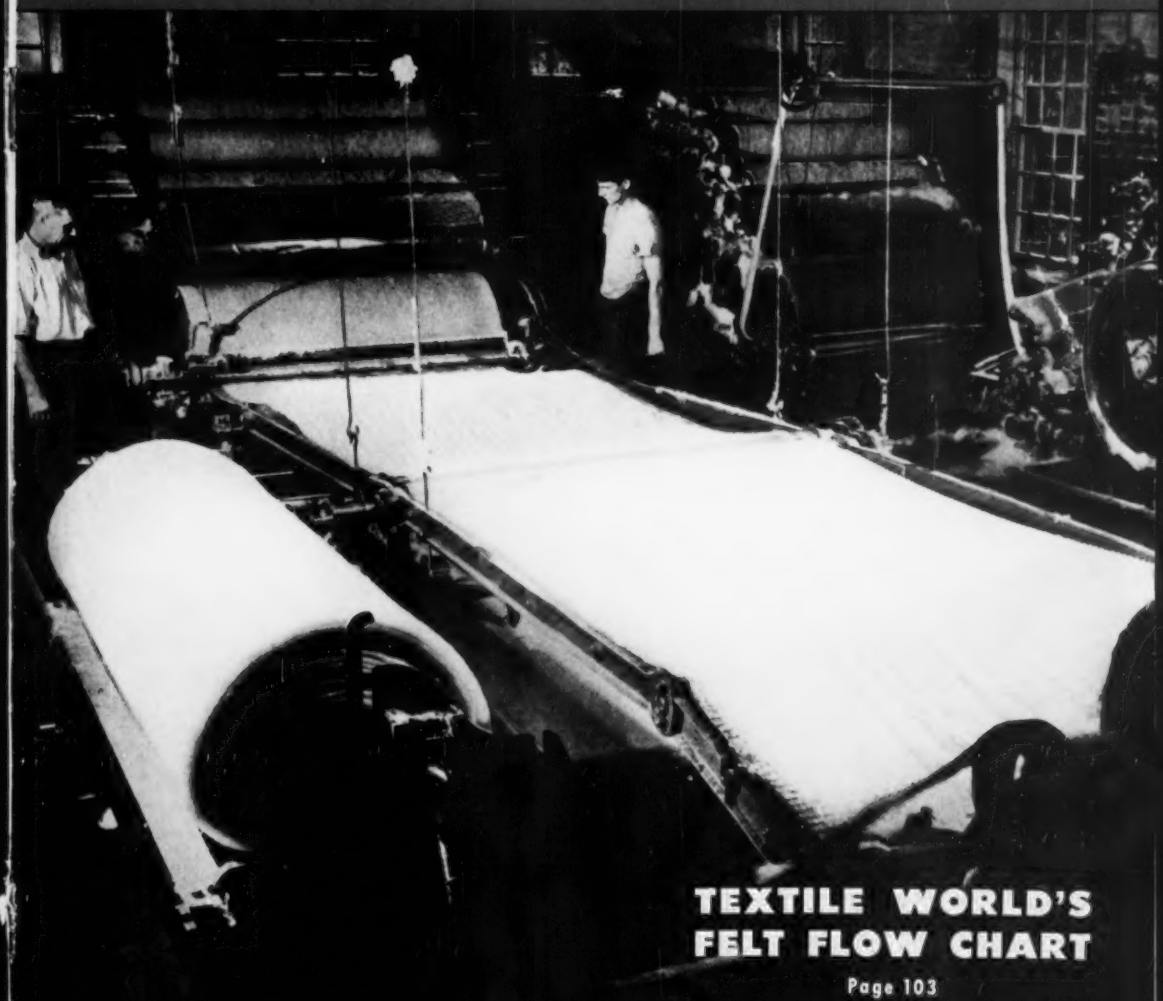
# TEXTILE WORLD

A McGraw-Hill Publication ..... MARCH • 1949



## TEXTILE WORLD'S FELT FLOW CHART

Page 103

### SPINNING'S STANDARDS Don't Go Far Enough

Waste savings can be coupled with a piece-rate system or an additional incentive to operatives—especially on frames equipped with a vacuum waste-removal system. Details of the method on trial at two Southern mills start on page 122.

### MATERIALS-HANDLING Show Brings Wealth of Ideas

Cost-cutting ideas for application in textile mills were plentiful at the recent materials-handling show, and many a textile man was on the spot to look them over. A picture summary of some of the best ideas starts on page 112.

### How Botany Mills Handles GRIEVANCES

Botany's positive system for handling grievances in five steps from the lowest to highest management levels in a 21-day period has cut the number of grievances going to top executives by 75%. Full details begin on page 107.

*A Complete Financial Service*

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THE *Long-Range* VIEW

# Let's Interlock Knowledge, Too!

**Various branches** of the textile industry are becoming interlocked to the extent that successful mill men must have a working knowledge of more than one branch.

Everyone in the industry knows of major interlocking influences, such as use of synthetics in all branches, use of wool on cotton-type machinery, purchase of knitting machines by weaving mills, and processing of multi-fiber blends by finishing plants.

The various segments of individual mills are being bound more closely as they institute automatic handling of materials between departments, as well as within departments. Integration, both vertical and horizontal, is a continuing trend that emphasizes the interdependence of related divisions. The application of new chemicals and techniques in the making and finishing of both yarns and fabrics have led mill men into many new fields.

**These clearly evident trends** bring with them a personnel requirement that is not so fully recognized as are the trends themselves; that requirement is the need for operating supervisors to have a knowledge of textile operations beyond their immediate departments and the need for programs to broaden as well as deepen these supervisors' technical knowledge.

Bertrand W. Hayward, director of the Philadelphia Textile Institute, says he is "surprised at the lack of knowledge that one man has of what goes on in other departments." So are we many times. Director Hayward realizes the importance of giving the student a broad, basic understanding of textile technology, just as TEXTILE WORLD realizes that one of its functions is to keep our industry fully informed of latest technological advancements in each branch.

Beyond taking advantage of the wealth of technical literature that is available, top operating executives can do much to broaden viewpoints within their own organizations. For example, one supervisor can explain to the others—at regular or special staff meetings—details and interdepartmental problems of his particular area, after which he should be ready to answer questions about his operations. He should also encourage suggestions from other departments as to how he can help them and vice versa. No one—such as the plant manager—should dominate these sessions.

*"If you're such a GOOD production manager, then why can't you change a 51-gage machine to 66 gage for one teenie-weenie pair?"*

**Top management** should encourage visits by supervisors not only to similar and related departments but to all areas. You may be surprised at the ideas which can be picked up by anyone seriously looking for help. As one progressive textile engineer puts it, "I can learn something of value to textile production even in a soap factory." The visitor can certainly pick up ideas in regard to storage, materials handling, personnel accommodations, if nothing else.

This same engineer, R. E. Oberholtzer, of James Lees & Sons Co., says, very correctly, that when department heads understand the relationship of problems within the mill, the work of the engineering staff becomes more effective. This understanding reduces the tendency for a department head to clamor in his section for engineering services on a job which is less important than one that has the engineering staff busy in another.

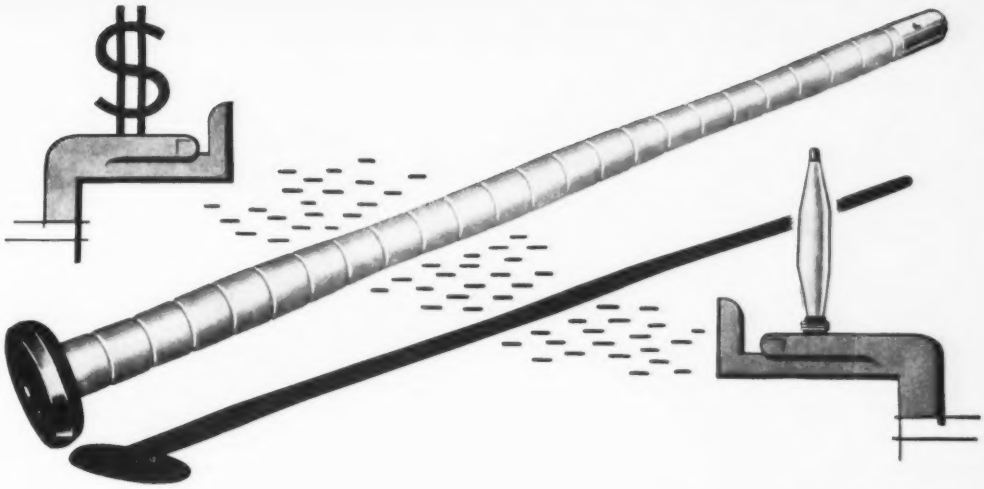
What we say here regarding the broadening of knowledge applies to top management as well as to department supervisors.

We are reproducing a cartoon that appeared in our May, 1948, issue. In originally selecting this cartoon, we realized it had a half-serious purpose. Those production men who chuckled at it did so because they could recall almost equally impossible tasks requested of them by sales organizations or even by the company president.

**We appeal especially** to top officials who are willing to encourage their operating supervisors to extend their knowledge beyond their immediate jobs, to do something concrete such as setting up a means for interchange of information and for getting facts from the field.

Some managements encourage supervisor clubs or support recreation buildings. They realize that if their supervisors know each other better, there will be less friction in plant operations. What superior way is there for men to know each other better than for them to discuss the one big thing they have in common: the successful operation of their mill?

C. H. Bendigo



# Not a Purchase, but a POLICY

Yarn carriers are but a fraction of mill expense — yet exert a tremendous influence on high production and high quality. Establish the policy of obtaining the BEST carriers. Get the larger packages, the smoother operation, the imperfection-free yarn that **paper** carriers deliver. In recent years mills using A.P.T. tubes have increased tremendously; furthermore, much modern machinery is specifically designed to take exclusive A.P.T. carriers. Recognize this trend in shaping your mill's policy. (Every A.P.T. order tailor-made to your specific mill conditions).

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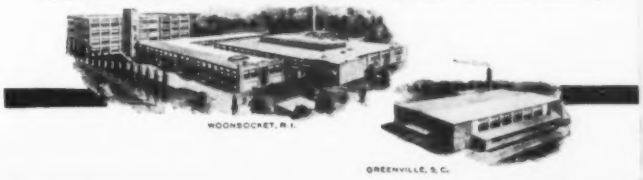

# How processing can make or break the "beauty value"

When fabrics possess that certain "look" of beauty, an important part of this added value comes from proper processing.

That explains why so many of America's leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

Remember, there is a C.P.P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for details. Or, write today to Industrial Department, Colgate-Palmolive-Peet Co.

*Photographed here, a 100% cotton plaid. Washable. Comes in shades of blue with maize; shades of red with gray; shades of blue with red; shades of red with brown and maize.*

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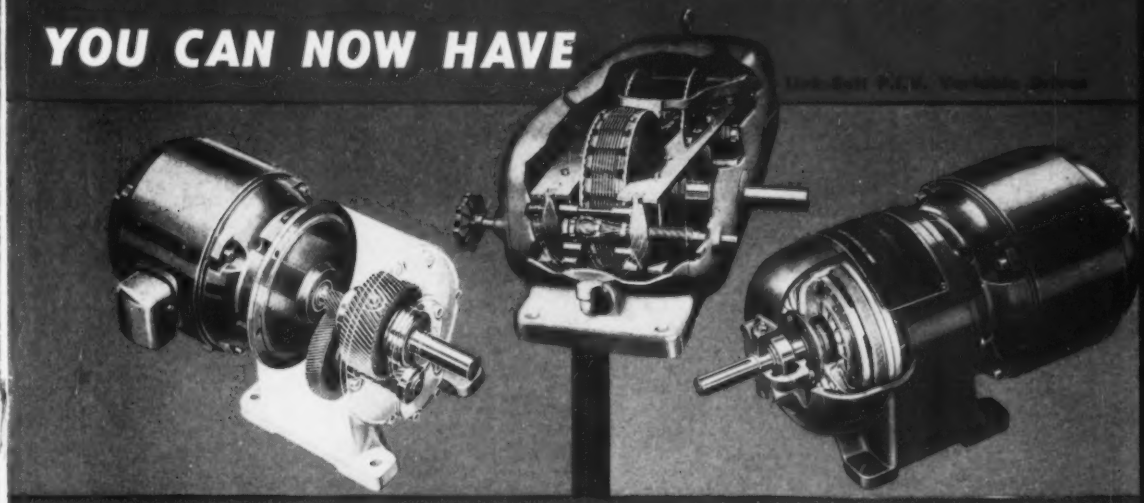

Link-Belt Speeder

Link-Belt V-Belt Variable Speed Drives

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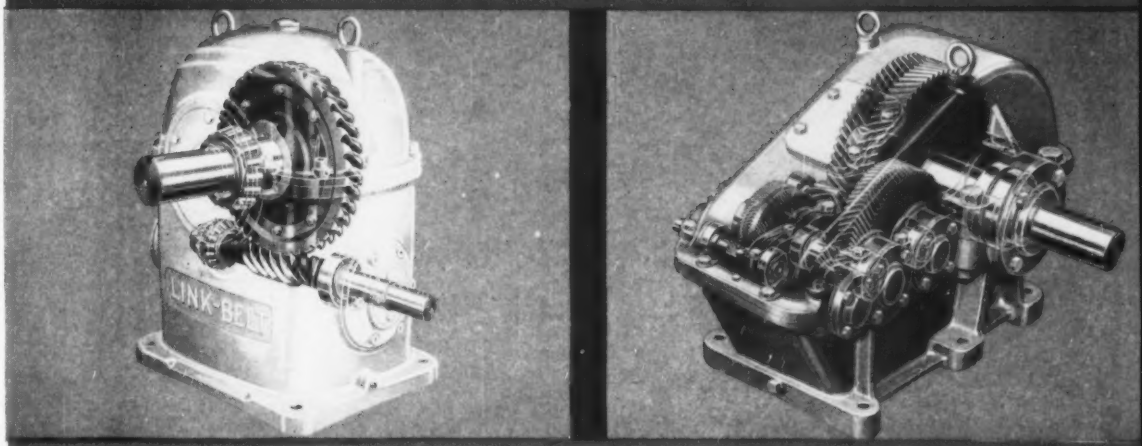


Link-Belt Worm Gear Drives

Link-Belt Herringbone Gear Drives

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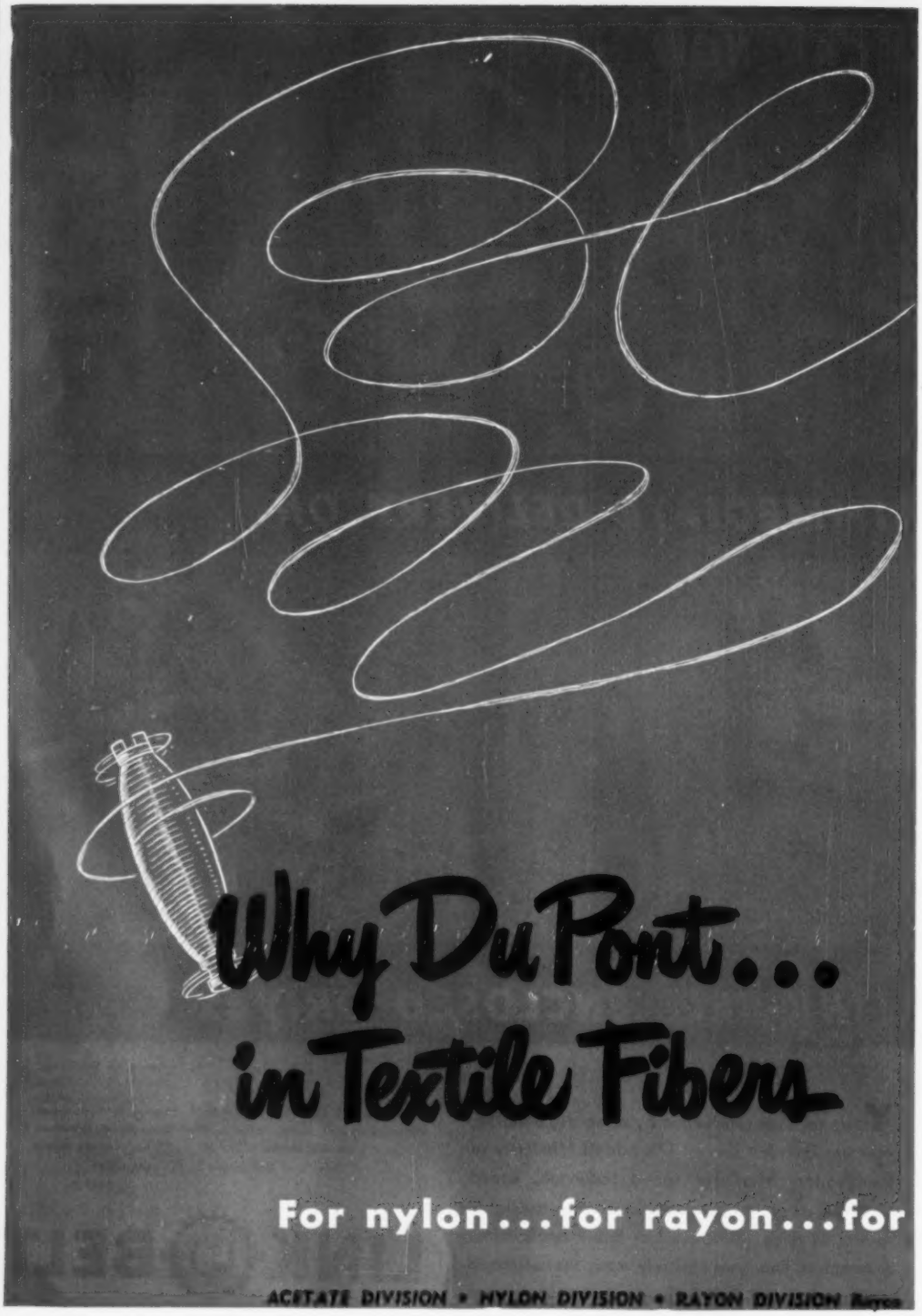
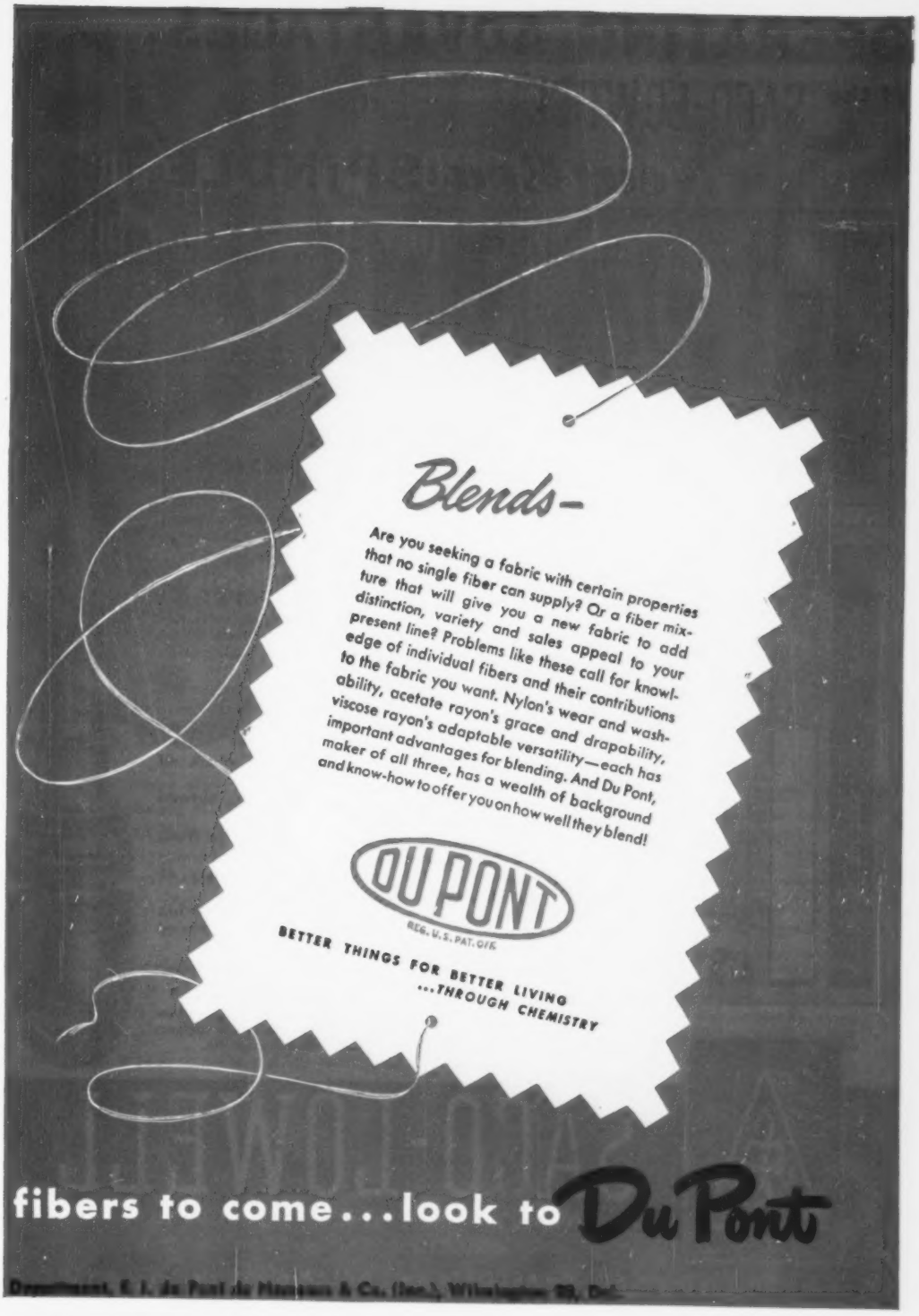

Why DuPont...
in Textile Fibers
For nylon...for rayon...for
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION Rayon


Blends—
Are you seeking a fabric with certain properties that no single fiber can supply? Or a fiber mixture that will give you a new fabric to add distinction, variety and sales appeal to your present line? Problems like these call for knowledge of individual fibers and their contributions to the fabric you want. Nylon's wear and washability, acetate rayon's grace and drapability, viscose rayon's adaptable versatility—each has important advantages for blending. And Du Pont, maker of all three, has a wealth of background and know-how to offer you on how well they blend!
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## *New Era* SPINDLE

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**TAPE CONSUMPTION**

**96.6% Saving**

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The COMPASS belt is bodied with multi-strand cords, spiraled continuously without a splice. Cords on opposite side of belt axis are twisted in opposite directions to insure true running.

STILL going strong after more than 24,000 hours! That's the record to date of the COMPASS Flat Belt on the twister shown here. The G.T.M. — Goodyear Technical Man — specified the belt nearly four years ago. And it's been running 120 hours a week ever since it was installed — driving 104 spindles at 10,000 to 12,000 RPM.

The endless-cord construction of the COMPASS belt made it the G.T.M.'s choice for this severe-duty drive. COMPASS belts have strength and to spare because of the center layer of low-stretch cords, truly endless and laid up with both right and left twist to insure straight running. The tough, high-stretch fabric cover adds still more to belt life, even on the toughest drives.

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*Pioneers of the Rayon Industry*

# HOW

## to cut washing costs!

## Specify Nacconol NR

AMERICA'S LEADING SYNTHETIC DETERGENT

**GUARANTEED**

**40% active organic content**

WASHES · WETS · DISPERSES · FOAMS · EMULSIFIES IN HOT OR COLD SOLUTIONS AT ANY pH

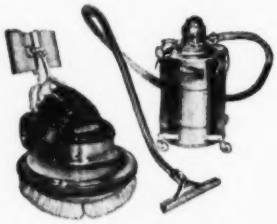
COSTS LESS · DOES MORE

**NATIONAL ANILINE DIVISION** ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y. (BOwling Green 9-2240)

| | | | |
|---|---|---|---|
| Boston, Mass., 150 Causeway St. | Capitol 0490 | Greensboro, S. C., Jefferson Standard Bldg. | Greensboro 2-2518 |
| Providence, R. I., 15 Westminster St. | Dexter 3008 | Atlanta 3, Ga., 140 Peachtree St. | Cypress 2021 |
| Chicago 10, Ill., 357 West Erie St. | SUperior 7-3387 | Chattanooga 2, Tenn., James Building | Chattanooga 6-6347 |
| Philadelphia 6, Pa., 208-204 S. Front St. | LOmbard 3-6382 | New Orleans, La., Cotton Exchange Bldg. | Raymond 7228 |
| San Francisco, Cal., 517 Howard St. | SUtter 7507 | Portland 9, Ore., 730 West Burnside Ave. | Beacon 1853 |
| Charlotte 1, N. C., 201-203 West First St. | Charlotte 3-9221 | Toronto, Canada, 137-145 Wellington St. W. | Elgin 6495 |

*Reg. U. S. Pat. Off.



*With Water Tank and Vacuum for Rug Scrubbing*

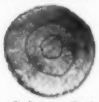
*With Dispenser for Hot Waxing*

★

*Interchangeable Brushes, Pads, Sanding Disc*

*Wire Brushes*

*Fibre Brushes*



*Polishing Pad*

*Steel-Wool Pad*

*Sanding Disc*

THE *Multiple-Purpose*
FLOOR-MAINTENANCE MACHINE THAT'S
# *Two Sizes in One!*

Here is a floor-maintenance machine that not only can be used for many types of floor care, but also affords the further economy of a machine that is two sizes in one. This *100 Series Finnell*, in one of the larger sizes as shown above at left, can be reduced to the small size unit shown in circle.

Note the low, trailer-type construction of the machine, and how easily it goes beneath furnishings. Thus it is ideal for use in crowded areas. In fact, the dual size feature and low construction of the machine adapt it to use on many floors otherwise inaccessible to machine care.

As easy to handle as a household vacuum cleaner, yet this *Finnell* is powerful . . . fast . . . and thorough. Mounts a G. E. Drip-Proof Capacitor Motor . . . is equipped with Timken Bearings. And the ruggedly constructed worm drive, housed in an extra-capacity leak-proof gear case, lubricated for 1500 hours, assures smooth, noiseless performance. A precision product throughout. Three sizes: 13, 15, and 18-inch brush diameter.

For consultation, demonstration, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1903 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

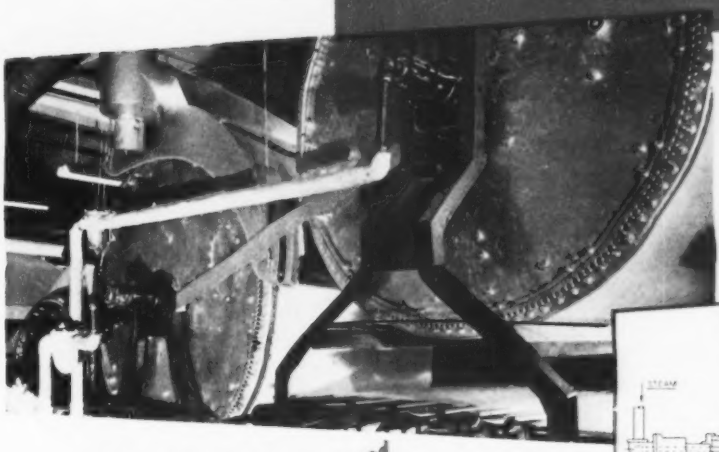
Everything for Floor Care
FINNELL

**FINNELL SYSTEM, INC.**
*Pioneers and Specialists in*
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

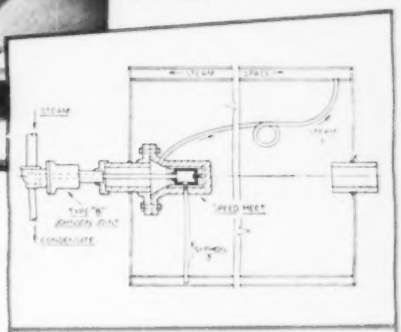
# now

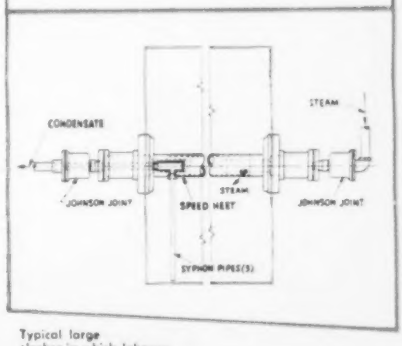
## Faster Heating
## Increased Production
## Less Warp Stretch and Breakage



Large cotton slasher equipped with the Johnson Speed Heet System—the multiple rotary syphon pipe drainage system for large cylinders which introduces faster heating, hotter cylinders, trapping without flash tanks, reduced warp stretch and breakage. New portable boring fixture simplifies installation on existing machines.

Typical installation of the Johnson Speed Heet System in a double drum dryer, showing how multiple syphon drainage pipes rotate around special selector pipe.




Typical large slasher in which Johnson Speed Heet System is installed. Steam enters at right, condensate is removed through rotary syphon pipes at left.

## . . . with the Johnson Speed Heet System for large slashers and double drum dryers

The name itself tells the story. The Johnson Speed Heet System speeds heating-up time considerably, permits hotter cylinders and higher operating speeds. Tests in one plant, for example, showed an increase in slasher speed from 14 to 17½ yards per minute after the Speed Heet System was installed.

Essentially this Johnson Speed Heet System provides, for larger cylinders, all the advantages of syphon pipe drainage regularly used on smaller cylinders. In contrast with the old style bucket drainage, it employs multiple syphon pipes which rotate around a special selector pipe and register successively with a hole in the selector as they become submerged in the condensate.

As a result, accumulated condensate is removed immediately when steam is turned on. During operation, too, condensate and air are removed much more effectively than with bucket style drainage. The friction-reducing Johnson Joints, moreover, which are an important component of the Speed Heet System, greatly reduce warp stretch and breakage.

This Speed Heet System can easily be installed on your present machines—large slashers, double drum dryers or other large cylinders. Johnson has available a portable boring fixture to machine the internal flange from outside to receive the Speed Heet System.

**See what big savings and benefits the Johnson Speed Heet System has been able to guarantee in many mills. Write today for all the facts.**

**JC** Product of The **Johnson Corporation**

**814 Wood Street, Three Rivers, Michigan**

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

# Yes, it is "THE HERR CONICAL RING" the latest in design and perfection

If your spinning and twisting problem is rings, the **Herr Conical Ring** is the answer.

**The Herr ring** is designed for quality spinning and twisting of wool, worsted, synthetic and blended yarns of all types.

This ring is constructed of durable drop-forged steel and mounted in special die-cast holders to accommodate any spinning and twisting rail conditions.

Since the shape of this ring is conical, it produces a different action of the traveler running on the ring. This action is outward and downward with the traveler riding on the top and side face of ring, leaving the bottom foot of the traveler free to act as a compensating factor to the yarn. This naturally reduces breakage of the yarn and produces higher quality with increased production and reduced waste.

**The Herr Conical ring** is designed with special oil features that absolutely control the flow of oil to the traveler. The results are cleaner fabric, minimum amount of oil consumed, long life to traveler, and NO rewicking.

Hundreds of thousands of **Herr Conical rings** are giving outstanding performance in plants throughout the world. Why not get complete facts on this ring before you embark on your next ring replacement program? We will be glad to have one of our representatives call at your convenience.

**See the Herr Conical Ring and the Herr Flyer at the Knitting Arts Exhibition in Atlantic City, Booth No. 96BB**

**HERR MANUFACTURING COMPANY, INC.**

318-320 Franklin Street

BUFFALO, N. Y.

SANDOZ PRESENTS

*the color achievement of the month*

# *Vermont Tartan*

## ...BY OLD BENNINGTON

For Peck & Peck, Old Bennington Weavers have created a group of striking new plaid tweeds, one of which — in gray, with overplaid of blue and yellow — is shown in the model's suit.

Serving a discriminating trade, these famed Vermont weavers use utmost discrimination in selecting *their* suppliers . . . among them, for dyes of trustworthiness, Sandoz.

Why is Sandoz so consistently an important source of colors for the "blue-ribbon" yarn producers, weavers, knitters, converters and independent dyers? Because of the confidence created by a succession of such Sandoz achievements as:

**ALIZARINE LIGHT BROWN BL PAT.**

It's a brown that is recognized throughout the woolen and worsted trade as the outstanding brown for light tan and camel hair shades. Its all-'round fastness makes it suitable for blending wool with *natural* camel hair. And it is also a favorite of auto fabric manufacturers who can depend on its fastness under mill processing and under the punishing service of an automobile's life.

For any chrome, acid or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

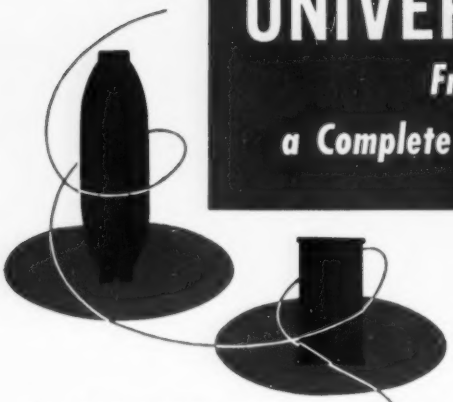
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto. • Other branches at Providence and Paterson.

SANDOZ *thinks ahead with textiles*

SANDOZ

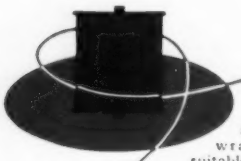
# UNIVERSAL-ATWOOD

## *From pirn to cone—*
## *a Complete System for Throwing Nylon*

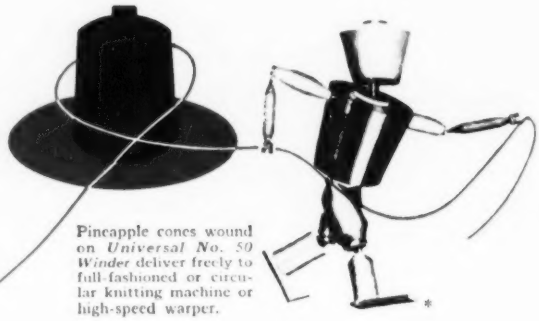


Pirns of nylon yarn are rewound at high speed on *Atwood Model 200 Redraw* onto spools of proper density and wind, which insure highest efficiency when used as supply for up-twisting.

From the time nylon yarn enters a throwing plant until it leaves . . . it can be processed on machinery *all* built to a single standard of manufacturing quality. Only Universal, with its Atwood Division, builds a complete line of throwing equipment.



Bobbins of uniform twist and accurate number of wraps, providing a suitable delivery for the sizing machine, are produced by *Atwood Up-Twisters.*



Pineapple cones wound on *Universal No. 50 Winder* deliver freely to full-fashioned or circular knitting machine or high-speed warper.

Tubes sized single end on *Universal No. 250B* Sizing Machine are built with a special traversing arrangement which, by alternately lengthening and shortening the yarn layers, forms tapered selvedges for free delivery to the next operation.

LEESONA

**UNIVERSAL WINDING COMPANY**

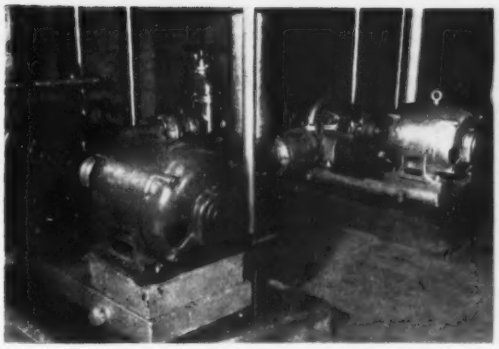
P. O. BOX 1605 ● PROVIDENCE 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland. *Agents in every principal textile center throughout the world.*

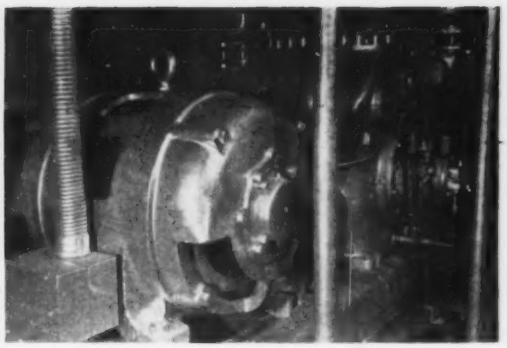
*Reg. U. S. Pat. Off.

**UNIVERSAL-ATWOOD NYLON TWISTING, SIZING AND CONING**

*used by more throwsters than any other method.*



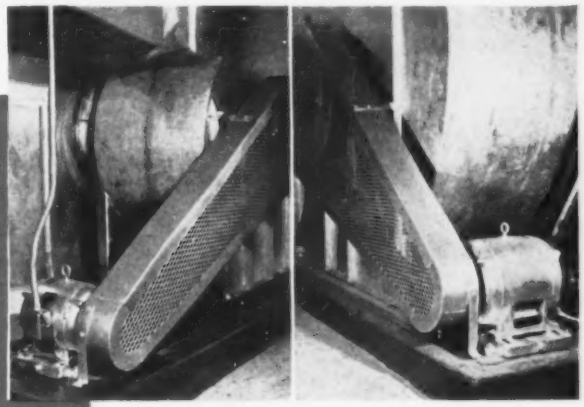
● Two Century 10 Horsepower Squirrel Cage three phase motors driving pumps — first is condenser water pump to dissipate heat; second pump circulates the cooled water.



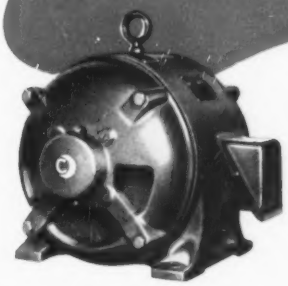
● 100 Horsepower Century Squirrel Cage motor driving a refrigeration compressor.

## Thousands of Satisfied Users Specify

# Century MOTORS - For All the Equipment on Air Conditioning Installations



● One 30 Horsepower and one 5 Horsepower Squirrel Cage motor driving cool air supply fans.



-622

## They Start Quietly and Operate Quietly

Century motors are built to match the requirements of the equipment they drive. Multi-speed squirrel cage motors provide flexibility—wound rotor motors provide a wide range of speed control. A complete line of constant speed squirrel cage motors handles all normal installations.

Century Splash Proof frames protect the motor against the hazards of dripping or splashing liquids, indoors or outdoors.

Totally enclosed fan cooled frames furnish protection against destructive dirt that packs.

For atmospheres containing explosive gases and dusts, explosion proof frames are available.

Century builds a wide range of types and kinds of electric motors, in sizes from 1/6 to 400 horsepower, for operation on single phase, polyphase and direct current.

Specify Century motors for all your electric power requirements.

Popular types and standard ratings are generally available from factory and branch office stocks.

**CENTURY ELECTRIC COMPANY**

1806 Pine Street • St. Louis 3, Mo.

*Offices and Stock Points in Principal Cities*

# INDUSTRIAL *Versatility*

● Manufacturing a wide variety of pressure and gravity vessels over the years has earned the Chattanooga Boiler and Tank Company a reputation for industrial versatility. The many installations produced and erected in almost every field of processing and converting, enable our organization to help you with your specific materials storage problem. Our experienced craftsmen take pride in meeting your requirements with products designed and fabricated to give you maximum performance with a minimum of maintenance.

**CHATTANOOGA BOILER and TANK CO.**

*Chattanooga, Tenn.*

STEEL SOUTHLAND PRODUCTS

OVER 40 YEARS OF SERVICE TO AMERICAN INDUSTRY

# Penfield *announces* 2 new cation Resins

PIONEER IN ION EXCHANGE

*for water softening*

with **3** to **6** times
the capacities of
GREENSANDS or ZEOLITES

**1.**

## PENEX-E

PENEX-E is a rugged cation resin having a normal exchange capacity of 12 kilograins, with a salt regeneration dosage of 0.45 lb. of salt per kilograin of hardness removed.

**2.**

## PENEX-T

PENEX-T is a brand new cation exchanger having a normal capacity of 25 kilograins with a salt regeneration dosage of 0.30 lb. of salt per kilograin of hardness removed.

These sensationally high capacities compare with 4 and 8 kilograins per cubic foot for Greensands and Zeolites, respectively. In addition, Penex resins give a softer water with more stable characteristics. IF DESIRED, WE WILL FLY AN ENGINEER TO YOUR PLANT.

**PENFIELD PRODUCTS, INC., 19 High School Avenue, Meriden, Conn.**

Priced Competitively

Money Back Guarantee

**PENFIELD PRODUCTS, INC.**
**19 High School Ave., Meriden, Conn.**

**REQUEST FOR DIRECT QUOTATION**

Gentlemen: Please quote price on:

_____ cubic feet of PENEX-E _____ cubic feet of PENEX-T

Now using: ☐ Greensands ☐ Zeolites

Water Analysis_____ Frequency of Regeneration_____

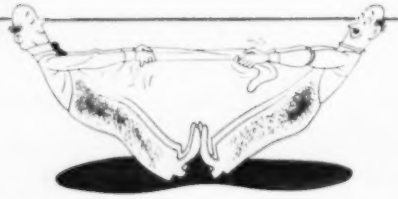
Name_____ Title_____

Firm_____

Street and City_____ State_____

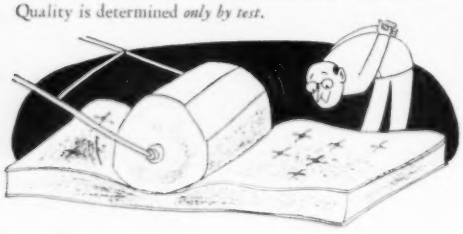
# These are "Trying" Times

## —be sure to try it before you buy it!



**The Pull-the-Leg Test.** You should see what a woman's stocking goes through before it reaches a leg. Wow! Snagging tests, abrasion tests, flexing tests, bursting tests, dye and fiber tests. But after all, it makes sense. Quality is determined *only by test.*

**The Lye Test.** Don't let anyone "pull the wool" over your eyes. If you want to make sure a fabric is all wool, simply boil a small piece of it for about fifteen minutes in a solution of lye and water. If the fabric dissolves completely . . . well, it *was* all wool.



**The Sleep-Like-a-Log Test.** They use a mechanical Rip Van Winkle to test the quality of a mattress. Back and forth, back and forth a heavy eight-sided roller passes over the mattress. If the mattress can stand up under 400,000 passes, you can be sure it's one of the best.

### The Square Foot Test

One of the surest tests to find the best *and most economical* brand of paint to use in your plant is the *square foot test.* Take a gallon of any good paint and a gallon of Barreled Sunlight. Thin each according to directions on the cans. Then measure the number of square feet each paint covers on a wall. And, because labor represents about 80% of the cost of any painting job, check the length of time it takes to apply each paint. Notice the difference in their whiteness and hiding power after drying overnight.

Yes, compare any good paint with Barreled Sunlight. You'll see that *Barreled Sunlight will do a better-looking, longer-lasting job at lower cost for both paint AND LABOR than any other paint on the market.*

See for yourself. Let your nearest Barreled Sunlight representative give you a convincing demonstration. Write.

**U. S. GUTTA PERCHA PAINT COMPANY**
**20-C Dudley St., Providence, R. I.**

# Barreled Sunlight *Paints*

**In whitest white or clean, clear, pleasing colors, there's a Barreled Sunlight Paint for every job**

# Faster on the "draw"...

## Warner & Swasey

### DOUBLE HEAD FULL INTERSECTING

IMMEDIATELY upon introduction, the Warner & Swasey *Dual* Delivery Pin Drafter began hanging up record performances for speed of delivery and quality of delivered sliver, on yarn processing prior to roving.

To further speed production and to achieve still further savings, a *Quad* Delivery Pin Drafter is now introduced. It is designed for drawing operations where entering weight is 400 grains, or less per yard for each delivery—permitting a total aggregate of entry of 800 grains per yard per head. Its effect is to double production.

Both machines are in a class by themselves. They introduce an advanced application in yarn drafting on straight wool, blends of straight wool, wool and synthetic cut staple, and certain types of 100% synthetic cut staple.

Write for free descriptive booklets and information on how you may have a test run on your material. Address inquiries to Textile Division of Warner & Swasey Co., Cleveland, Ohio.

Pin Drafter TRADE MARK

*For Descriptive Booklets Mail This Coupon Today*

WARNER & SWASEY
*Cleveland*
TEXTILE MACHINERY DIVISION

The Warner & Swasey Company
Textile Machinery Division, 5701 Carnegie Avenue
Cleveland 3, Ohio

Yes, I would appreciate additional information about the Warner & Swasey Quad Delivery Pin Drafter ____
or the Warner & Swasey Dual Delivery Pin Drafter ____

*Name* ____ *Title* ____
*Company* ____
*Address* ____
*City* ____ *Zone* ____ *State* ____

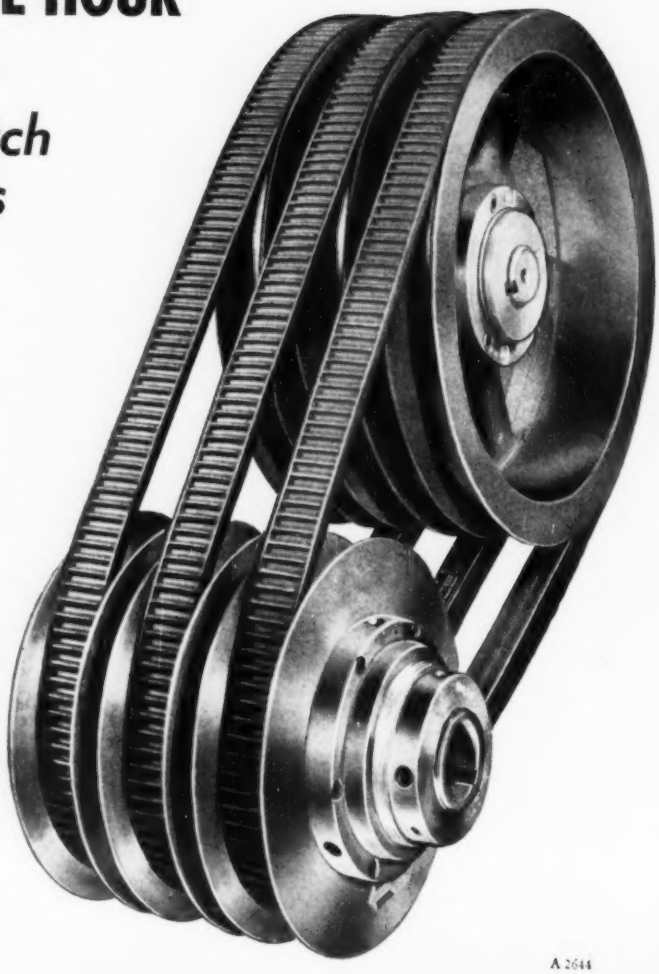
D-3-19

*You can do it better, faster, for less . . . with a Warner & Swasey*

# 3 Ways to Cut

## 1. PRODUCE MORE PER MACHINE HOUR

### with Vari-Pitch Drives



QUICK EASY SPEED CHANGES and accurate speed control will give you more production, reduce your unit costs. The simplest method of speed control is Vari-Pitch Drive. Simple, rugged, clean, quiet — these drives give you the speed control you need at lower cost than any other way. Three types cover all applications.

**STATIONARY CONTROL** — Most widely used and lowest cost speed control. Change speeds in 5 to 8 minutes. Speed range of 50% to 100%.

**MOTION CONTROL** — Changes speed instantly *while machine is running*. Same 50% to 100% speed range. Greatest saving where speed changes are frequent.

**SPEED CHANGERS** — Fully enclosed multiple V-belt drive with special sheaves giving 375% speed range. Single handwheel adjusts *while running*.

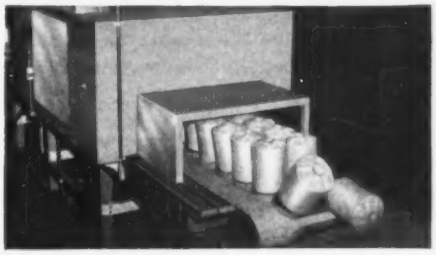
You can figure the saving in dollars and cents with the help of your Allis-Chalmers Authorized Dealer or District Office representative. He will help you analyze your operations and show you time and cost savings in your own production setup. Consult an Allis-Chalmers drive expert today. Also listed in Sweet's.

A 2644

*Texrope*, *Vari-Pitch* and *Quick Clean* are Allis-Chalmers trademarks.

# Costs FOR TEXTILE MEN!

## 2. SPEED HEATING AND DRYING *with Allis-Chalmers Dielectric Heaters*



DIELECTRIC HEATING has resulted in outstanding production records in many textile mills. Its chief advantages are: Increased speed, which smooths out production sequences and reduces stock in process. . . . Close heat control, which improves product quality greatly. . . . Even heating throughout, which improves product uniformity. *Allis-Chalmers Dielectric Heaters produce results that cannot be duplicated by any other process.*

*Typical Examples:* Drying reduced from days to minutes. Shrinkage variation below 0.4%. Twist set in minutes with definite improvement in tensile strength.

Go over your production methods with an Allis-Chalmers dielectric heating expert. He can tell you if your operations can be improved by this new method. He will show you cost figures based on your operations. You can't afford to miss this opportunity. Contact your A-C District Office or write direct today.

## 3. REDUCE MAINTENANCE COST *with Allis-Chalmers Textile Motors*

**QUICK-CLEAN MOTORS**

Less down-time for cleaning because large fans produce a greater volume of air and keep lint moving through unrestricted air passages. There is no place for dirt to lodge. Bearings are sealed — they may be operated five years without attention. Grease does not leak out. Available from 2 HP at 1200 rpm to 15 HP at 1800 rpm. Some in stock, others on quick delivery.

**LOOM MOTORS**

Totally enclosed, non-ventilated type. They have all of the operating characteristics required for efficient loom drive: high maximum torque . . . smooth power under rapidly changing load . . . extra overload capacity for breaking-in operation.

In addition, these motors have construction features necessary for long life and minimum maintenance. Anti-friction bearings . . . die-cast rotor, accurately turned and balanced . . . "Formvar" copper wound stator, twice dipped in insulating varnish and oven-dried.

Immediate delivery on ¾ and 1 horsepower ratings.

ALLIS-CHALMERS, 1056A SO. 70 ST.
MILWAUKEE, WIS.

A-C ALLIS-CHALMERS

# ALLIS-CHALMERS

***Originator of the Multiple V-Belt Drive for the Textile Industry***

# TEXTILE MACHINERY and

PUBLISHED BI-MONTHLY FOR TEXTILE MILL EXECUTIVES AND OPERATING PERSONNEL BY PROCTOR & SCHWARTZ, INC.

• MARCH • 1949 •


## Open Width Steamer Makes Cotton Finishing One Completely Continuous Process . . .

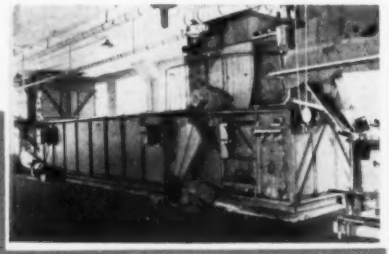
By means of this Proctor-Matheison continuous bleach system, goods can be handled in the open width, eliminating kier and jig scouring from cotton finishing. Thus, it becomes a completely continuous process, eliminating the time and labor involved in loading and unloading the kier or jig. Scouring time is reduced from several hours to less than one hour. Cloth is treated in a manner which eliminates the danger of rope marks or other distortions to the weave. Fabrics of any width and any weight may be handled efficiently and economically. From a cost standpoint the evidence indicates considerable saving over less recent and less automatic operations.

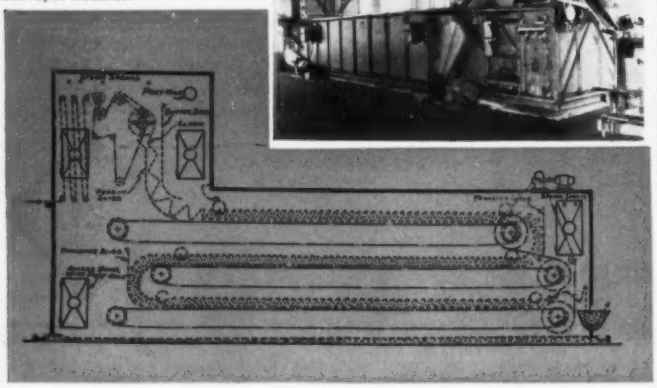
The system is made up of two units —one for caustic and the other for the peroxide phase of the operation. The housings for the two stages are made of insulated stainless steel panels. Inside may be one, two or three stainless steel perforated plate conveyors which carry the goods. Material is padded preparatory to feeding into the first unit of the steamer. Inside the steamer it is carried over rolls where it is subjected to steam sprays which bring the temperature of the goods up to 212° F. The material is then run in contact with a rotary plaiter so as to deposit the goods on the conveyor in the vertical plaits of relatively uniform height. Where multiple conveyors are used, there is a discharge transfer slide so as to guide these plaits from one conveyor to another. The material is taken off the last conveyor and run into the washer for caustic or peroxide removal, as the case may be.

The system may be designed to meet individual mill requirements. When writing for details please supply as much information as possible about your processing to enable us to intelligently answer your questions.

Right: photo shows caustic unit of one typical installation.

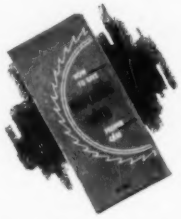
Below: side elevation drawing illustrates general arrangement of three conveyor steamer.





### STILL SOME AVAILABLE

*. . . Booklet on Care of Metallic Wire*



In its Sixth Edition, this interesting and helpful booklet has already had wide distribution among mill men. If you do not already have a copy—write for one or more today.

### *We'll See You By The Sea*

Plans are underway for an interesting Proctor exhibit in booths 186-195 at the Knitting Arts Exhibition to be held in Atlantic City's Convention Hall during the week of April 25th.

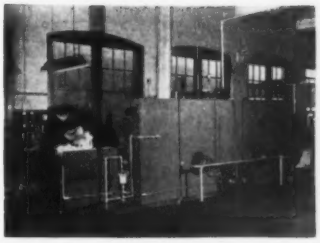
Proctor automatic boarding machinery will be in actual operation finishing hosiery for a prominent Philadelphia mill.

The Proctor preboarding machine will likewise be on exhibition. Late mechanical improvements in this equipment will be spotlighted.

Another phase of the exhibit which will be of keen interest to knit goods manufacturers will be a part devoted to an explanation of the Redman shrinking process. This process, on which Proctor engineers have been working closely with the Underwear Institute, will be illustrated diagrammatically—since it is impractical to show it otherwise.

For details on the Redman process and information on the latest boarding and preboarding techniques—we'll see you by the sea in April.

# DRYING EQUIPMENT *News*



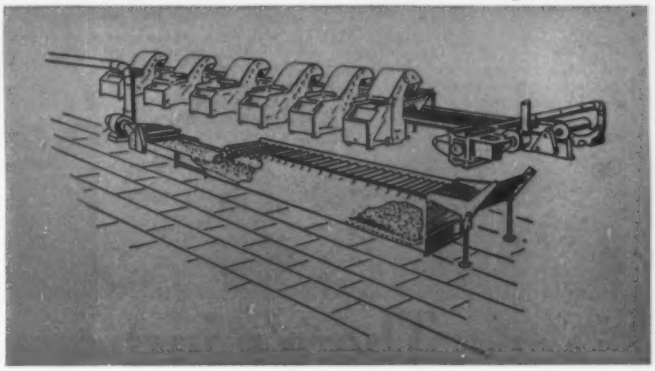
## *SINGLE CONVEYOR PRE-DRYER OFFERS NEW APPROACH TO HOSIERY DRYING*

In the handling of many types of socks and stockings, particularly those of heavy weight, it is necessary to slow down boarding appreciably or to more or less pre-dry the socks prior to boarding. In the past, when the latter has been done, it has been a time consuming, delaying operation. Often it has been accomplished by hanging the socks in a relatively dry room kept at a warm temperature. This has been a slow process and one over which the mill has little control.

In order to meet the needs of the industry for a speedy, controlled and certain method for pre-drying heavy weight socks prior to boarding, Proctor & Schwartz, Inc. have developed a small single conveyor dryer. When this machine is used, the wet socks, coming from the dye-house, are loaded onto the two-foot wide conveyor of the dryer and slowly carried through a drying enclosure where it is possible to control temperature and air circulation to dry socks to a predetermined moisture content. A check on the first of these systems to be placed in operation, offers convincing evidence that this system is the answer to a long standing hosiery mill problem.

Write for Bulletin No. 336.

## Blending Problems Give Rise to Development of Modern Systems



Paralleling the trend to fabrics made from a blend of several types of fibers, has been the emphasis which Proctor engineers have placed upon the development of blending systems. Mill problems have given rise to many of the developments in this type of equipment. On the other hand—the possibilities opened up by modern blending equipment have made possible much of the advancement which has been seen in this field.

The types of systems designed and installed over the immediate past years have ranged from the most simple system — employing one picker, fed manually—up to fully automatic systems with a series of pickers, fed by automatic weighing feeds. The output needs, type of blending required, degree of labor saving to be achieved, all enter into the recommendation for any one plant.

The system illustrated represents one possible arrangement for a fully automatic system. It employs several weighing feeds which deposit various components of the blend in predetermined amounts to the long apron of a super picker, in such a way as to make a sandwich blend. After picking, the blend passes through a ceiling condenser and across a roller-distributor into the re-blending hopper. From here it is moved forward and broken down by receding pin rolls and fed to the secondary picker, from which it can be blown to the card room.

Proctor Bulletin No. 331 and copies of a recent talk on "Fiber Blending", explain more completely other basic types of systems and component equipment for blending. Write for your copies today.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

*Proctor & Schwartz, Inc.* • 710 TABOR ROAD • *Philadelphia 20, Pa.*

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FOR GREATER MACHINE OUTPUT in *your* plant, get the same variable speed drive that makes foreman Ralph Finkboner of Rochelle, Illinois so enthusiastic. Texrope Vari-Pitch Speed Changers give you smooth, accurate speed control at the turn of a crank. You operate your machines at *exactly* the right speed for highest production.

V-belt drive cushions Texrope Vari-Pitch Speed Changers against shock loads. Design is simple, compact, smooth running and easy to keep clean. Capacities range from 1 to 75 HP with stepless speeds up to 3.75 to 1.

The Texrope line gives you practically everything you need for any V-belt drive ... V-belts, standard and Vari-Pitch sheaves and speed changers . . . all from one reliable source. You can engineer 90% of all V-belt drives yourself with the help of the Texrope Pre-engineered Drive Manual. See your A-C Authorized Dealer or District Office or write for your copy today. Ask for Bulletin 20B6956. Also in Sweet's.

Texrope Super-7 V-belts result from the cooperative research of Allis-Chalmers and B. F. Goodrich; and are sold only by A-C dealers and offices. Texrope and Vari-Pitch are Allis-Chalmers trademarks. A-2646

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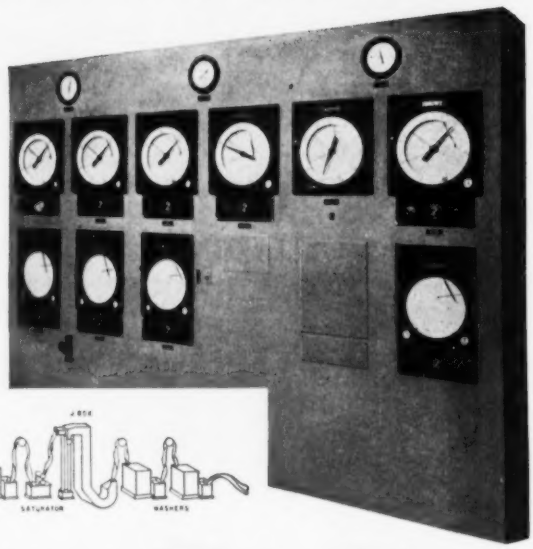
# Complete BROWN Control

**insures uniform bleach and efficient use of Chemicals... Power... Time...**



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The Brown centralized control system provides the precision and accuracy which makes continuous bleaching a paying proposition. Pressures, temperatures, levels, flow-rates and speeds are unified and controlled with split-second timing . . . to insure uniform bleach and maximum efficiency.

Uniformity is non-existent where lack of control permits variations in operating conditions... and maximum economies are not realized without automatic supervision of chemicals, power and time. Complete Brown Control . . . the result of research, development and application experience in leading mills . . . helps continuous bleaching realize its objectives.

Think of Brown control when you plan your continuous bleaching range . . . call in your local Brown engineer for consultation and advice. No obligation.

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*Product of* MINNEAPOLIS **Honeywell**

# Are you getting this *plus value* out of steel strapping?

HUNDREDS of sales-wise textile men are cashing in on an idea that grew out of Signode's continuing research into better packaging and shipping methods: *Signode Special Lithographed Seals.**

Not only do these colorful, individualized seals secure the steel strapping that secures your shipments, but they also perform two additional valuable services.

(1) Because they bear your company's name, or brand or trademark, they provide a smart means of advertising wherever your products travel; and (2) because they can't be replaced, they minimize the danger of pilferage or substitution—an ever present threat to textile men.

Many shippers have found these seals to be such a good way to reduce damage claims and increase customer good will that they call attention to their use. Special labels attached to shipments tell customers that their order is doubly protected—with steel strapping and substitution-proof seals—and that delivery of the order, thus protected, is proof that it hasn't been tampered with.

If you would like to give this added protection to your products; if you would like to cut costs and increase profits through the use of this and other Signode steel strapping methods—write

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# YOU GET MORE BEAMS

. . . and the with

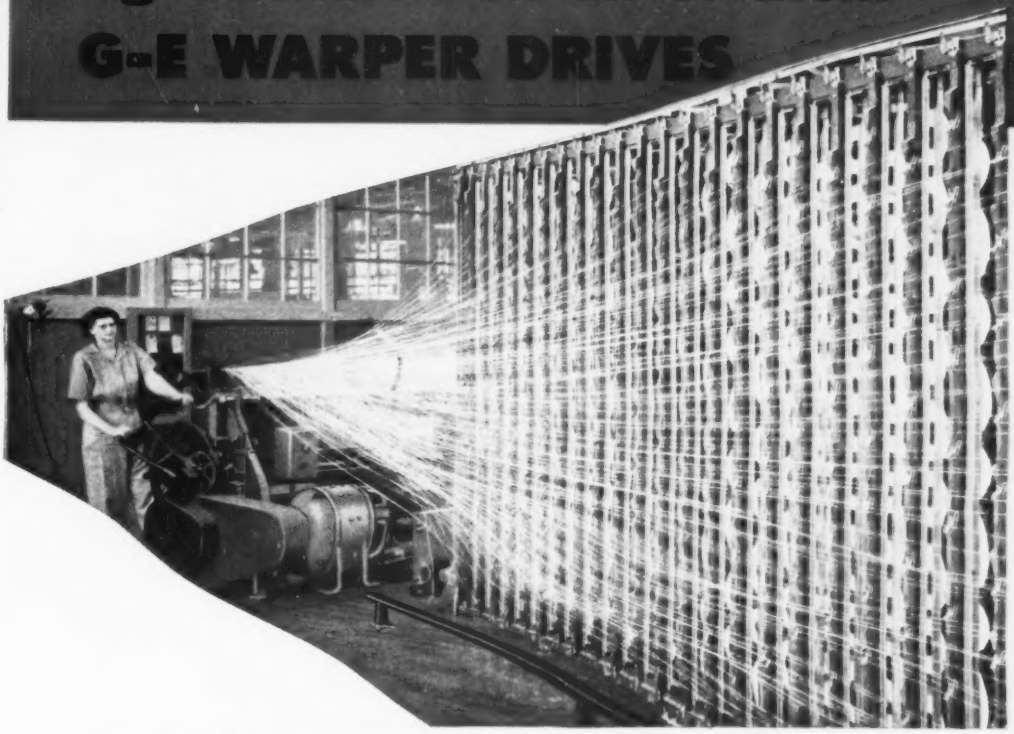
THERE'S A G-E WARPER DRIVE TO MEET EVERY MILL NEED!

The General Electric Speed Variator (left) is an adjustable-speed d-c motor drive for warpers with rheostatic control of tension. The General Electric Thy-ma-trol Drive (right) employs electronic tubes to provide required speed and tension control. G.E. also can provide specially-engineered drives.

***Here's what you get with a G-E Warper Drive!***

1. Constant, accurate control of yarn tension
2. Higher warping speeds
3. Smooth, fast acceleration and deceleration
4. Low jogging speed for quick, easy threading
5. Wide speed range
6. Space-saving design
7. Low maintenance cost

# *right tension on all of them*
# G-E WARPER DRIVES



Today, warping must be handled faster than ever before. Yet, many operators are faced with the problem of how to step up warping speed and still maintain the close control of yarn tension so necessary to the production of high-quality fabrics. The answer is—a General Electric all-electric Warper Drive.

***first*** This drive makes high-speed warping entirely practical by providing constant, accurate control of tension throughout the beam diameter buildup. Your operator can run his warper at higher speeds with tension within close limits at all times.

***second*** You get more yarn per beam with a G-E Warper Drive because the top limit in tension can be approached without risking loss of adequate yarn "stretch."

***third*** The warper can be stopped and started faster, thereby cutting down on the time lost in finding and tieing broken ends. Your production is up and the cost of finished cloth is down!

ASK YOUR WARPER MANUFACTURER!—Many warper manufacturers are working with General Electric textile mill specialists to help you get more and better warp beams through the use of modern warpers equipped with all-electric drives. One of them will be glad to make a study of your warping problems. For more detailed information on G-E Warper Drives, write today for a copy of GEA-5258. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

# How NOPCO* FUA

## cuts your wool processing costs

**3%** **OF NOPCO FUA**

applied to stock is all you need—3 lbs. NOPCO FUA per 100 lbs. wool—as against

**8%** **OF CONVENTIONAL WOOL OILS**

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**100%** **ELIMINATION OF SOAP**

NOPCO FUA *eliminates the need for all soaps and detergents* in fulling and scouring. It also stops static completely during carding. It does not rust or corrode. NOPCO FUA is anhydrous, all fatty, contains no mineral oil or hydrocarbons—is salt free and ash free.

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Let our Textile Packaging Laboratory show you what scientific package design can do for sales. We research consumer reactions at the point of sale—study your packaging and distributing methods, and your costs—and recommend the package most efficient for your needs and most attractive to the woman buyer. Container Corporation of America has a long, successful record of packages designed to sell on sight.

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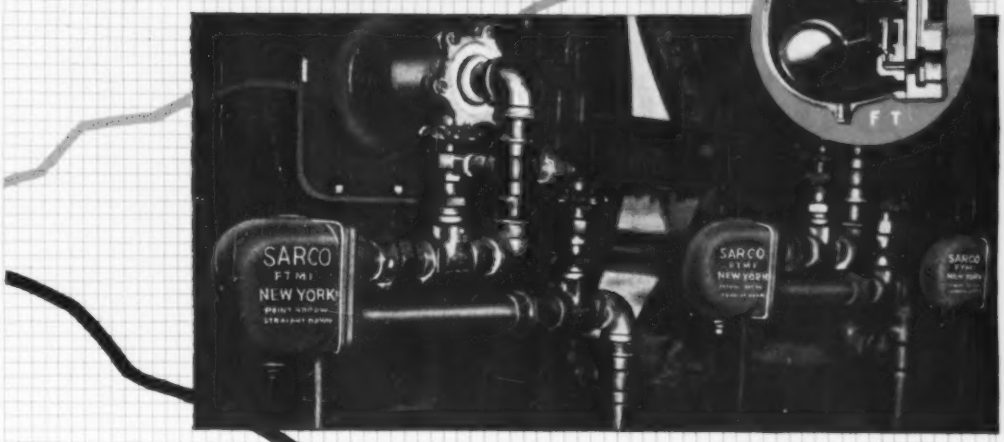
# KEEPING HEAT UP-



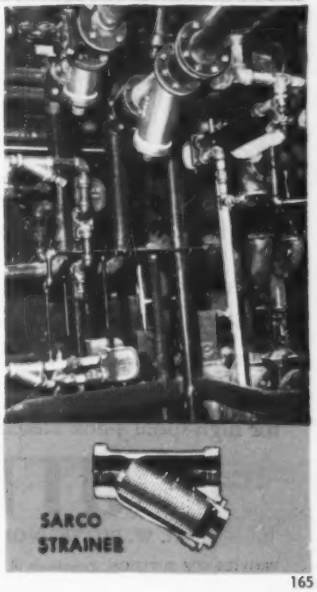

*-and Costs Down*

The top illustration shows the Sarco Float-Thermostatic Steam Trap on slashers in a textile mill—now operating satisfactorily after many months of condensate difficulties. The same story has been told and retold by users of similar machines in the paper and dyeing industries.

At the right is a section of a new and very modern rug mill which chose the reliability of Sarco FT traps and Strainers for its extensive air conditioning hook-ups because the engineers had seen their worth proven on other jobs for many years.

In the dyeing, chemical and food industries, four entirely different types of Sarco Steam Traps are combined with various forms of Sarco heating and cooling controls to provide efficient team work that can't be beaten.

Even on unit heaters, radiators and steam lines it is important to select the right steam trap or control. The Sarco representative near you will be glad to study, select and recommend the combination that will speed production and reduce fuel costs in your plant.




165

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SAVES STEAM

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*Represented in Principal Cities*
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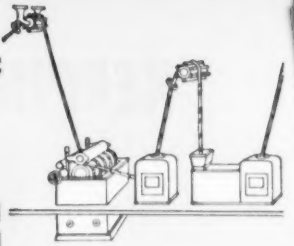
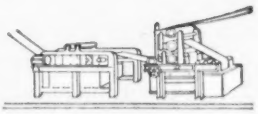
*Take a look at the latest figures on*

# HIGH-SPEED J-BOX BLEACHING

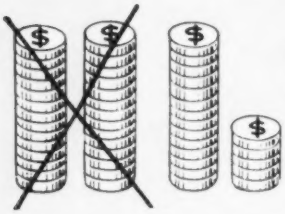


**USE LESS EQUIPMENT:** Two 4,000-lb. J-boxes do the work of 12 4-ton kiers. Typical daily production is 48 tons of 4.0 yard goods.

**SAVE FLOOR SPACE:** Complete 2-stage range requires only 1,350 square feet of floor space. To get equal production by kier bleaching would require 4,000 square feet of floor space.

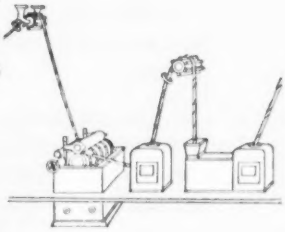


**SAVE STEAM:** High-speed J-box bleaching requires only 67,200 lbs. of steam to process 48 tons of cloth. Kier bleaching requires 288,000 lbs. of steam for same production.



**SAVE CHEMICALS AND LABOR:** Savings up to 40% in the cost of chemicals and labor are achieved in the two-hour J-box bleaching process. In kier boiling and bleaching, there is a time loss of 18 to 24 hours if bleach is not satisfactory.

When you buy a Butterworth Continuous Bleaching Range (either DuPont or Becco process), you buy a *complete operating job,* including motors, instruments and auxiliary equipment. It means *one* responsibility for the success of your installation. We will be glad to work with you on your plans for high-speed J-box bleaching.



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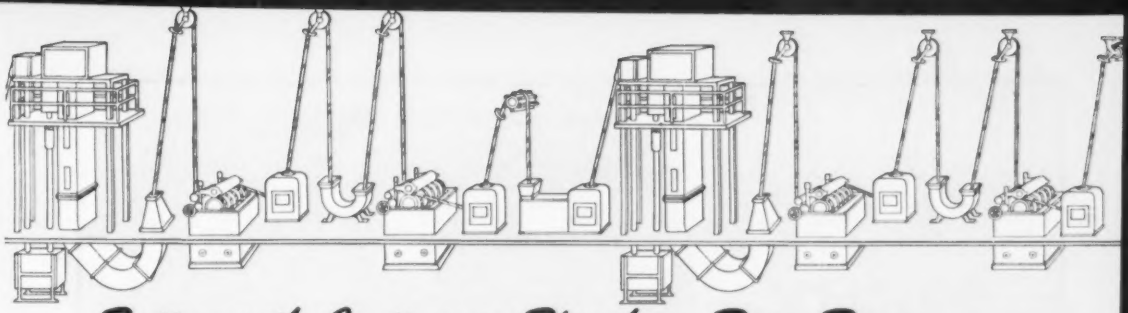
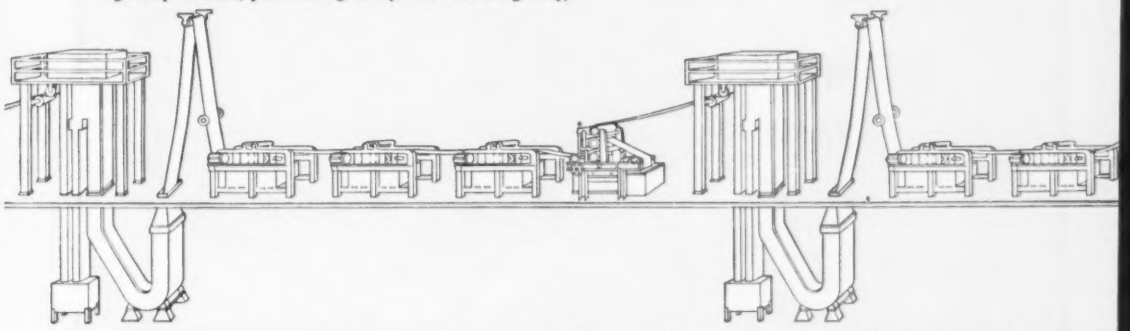


## Butterworth Continuous Bleaching Rope Range (DuPont Process)

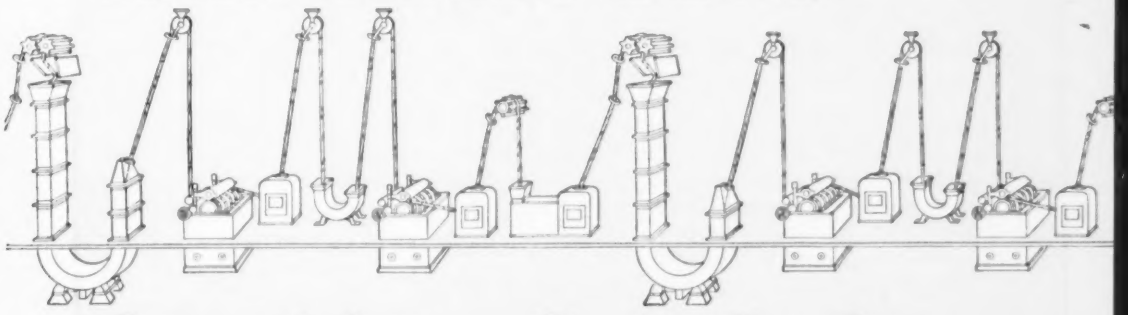
Cloth is washed in a Tight Rope Washer, passes through a Squeezer and enters a Caustic Saturator where it is impregnated with caustic soda solution. It goes through a pot-eye into the steaming tube of the J-box. After proper steaming, the goods pass directly into the J-box through special interlocking reels and plaitor mechanism and are folded in uniform condition front to back as well as across the width of the J-box. Cloth is next washed in a Tight Rope Washer, passes through a Squeezer and timing Scray, then passes through another Tight Rope Washer and Squeezer. This is followed by application of hydrogen peroxide in a Peroxide Saturator. Goods are then passed through a pot-eye, steaming tube and J-box, same as previously described. Goods pass through a Tight Rope Washer and Squeezer, thence into a Scray and finally are washed in a Tight Rope Washer and delivered through a Squeezer.



## Butterworth Continuous Bleaching Open Width Range

(DuPont Process)

After washing in a 6-Roll Horizontal Washer, the cloth is passed through a Caustic Saturator, where it is thoroughly impregnated with caustic soda solution. Cloth is then steamed in heater tubes and plaited down into the J-box. Guide rolls are at the top of each leg of the heater tube. Leaving the J-box the cloth is thoroughly washed in three 6-Roll Horizontal Washers, which will bring the alkalinity of the cloth down to ¼ of 1%. Cloth next goes into a Peroxide Saturator where it is impregnated with a solution of hydrogen peroxide. The cloth now passes through a heater tube and goes on into a J-box where it remains for approximately one hour to allow the cloth to bleach thoroughly. Removed from the J-box, the cloth is given a final wash in two 6-Roll Horizontal Washers.



## Butterworth Continuous Bleaching Rope Range (Becco Process)

Cloth is washed in a Tight Rope Washer and given maximum extraction in a pneumatic Squeezer before going into the Caustic Saturator. Here the cloth is impregnated with caustic soda solution. At the delivery end of the machine, two horizontal squeeze rolls with pneumatic pressure device and indicating instrument permit full knowledge of the pressure being applied. Cloth next goes through special interlocking reels and plaitor mechanism and is folded in uniform condition front to back as well as across the width of the J-box. Steaming compartments in the upright sections of the "J" and a small steaming unit in the bottom of the "J" are used according to the amount of goods in the J-box. Leaving the J-box the cloth is washed in a Tight Rope Washer, passed through a Squeezer and timing Scray, a small J-box for holding approximately 25 yards of goods. It then passes through another Tight Rope Washer and a pneumatic Squeezer where the desired extraction is achieved. This is followed by the application of hydrogen peroxide in a Peroxide Saturator. Goods are then passed through a pot-eye and into a J-box; taken through a Tight Rope Washer and Squeezer, thence into a Scray, and then another wash in a Tight Rope Washer and delivered through a Squeezer into the white bins.

*The New*

# SIMPLEX

*Model "F"*

## WOOLEN SPINNING FRAME

*Will do this for you . . .*

★ **PRODUCE MORE**—Continuous drafting and spinning of yarns at high speeds plus a minimum of "down time" enables the new Model F to produce quality yarns better and faster.

★ **LOWER COSTS**—Large spinning packages holding up to 2 lbs. of yarn, produced by Model F, bring cumulative economies that are felt through all ensuing processes.

★ **IMPROVE QUALITY**—The drafting and twisting of yarns produced on the Model F is positively controlled. The fine settings made possible by Model F will produce the exact yarns desired.

★ **LOWER MAINTENANCE**—Simplicity of construction and easy accessibility to all parts make Model F the easiest frame to maintain. Steady rather than intermittent operation practically eliminates breakage.

★ **SAVE SPACE**—Neat and compact in design, Model F uses less floor space per lb. of yarn produced than any other machine spinning yarns on the woolen system.

★ **OPERATE EASILY**—Particular attention in design of Model F was given to the ease and safety of the operator. Built low and nicely proportioned, everything needed to operate Model F is within easy reach of even the shortest operator.

*Detailed, illustrated literature is being prepared and will be sent at your request*

# Davis & Furber Machine Co.

**NORTH ANDOVER, MASS.**

**SINCE 1832**

# Built To Your Specifications By

# EX-CELL-O

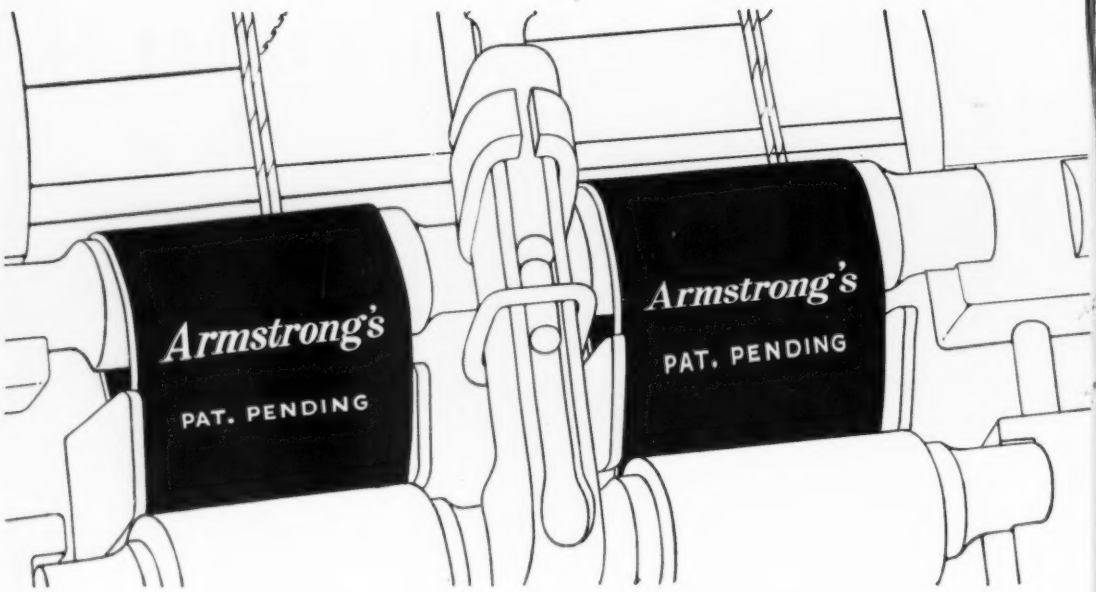
*... a great name in the*
**precision machine tool field!**

Ex-Cell-O has been making precision parts to customers' specifications for close to 30 years. Today, these Ex-Cell-O products include parts for the textile industry . . . from spindles and various small parts to large assemblies. Ex-Cell-O has the facilities—machines, heat treat, assembly, and inspection—to produce your precision parts economically, in small or large volume, and in accordance with your delivery schedule. For a quotation, send a part blueprint to Ex-Cell-O Corporation in Detroit today.

Bulletin No. 26181 describes Ex-Cell-O's textile products. Write now for your free copy.

**EX-CELL-O CORPORATION** DETROIT 32

XLO
EX-CELL-O for PRECISION



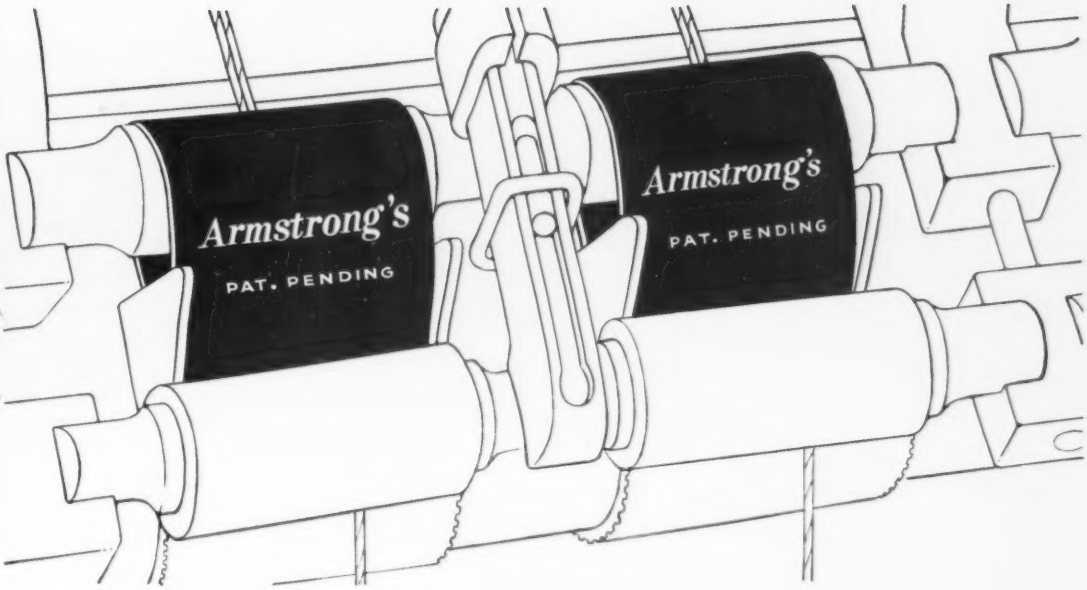

# Accotex Aprons

## ACCOTEX COTS... *by the makers of Accotex Aprons*

**ACCOTEX J-490** . . . A plain synthetic rubber covering especially useful where synthetic fibers are run on cotton system equipment or wherever maximum lap-resistance is necessary. After long initial service life, J-490 cots may be rebuffed 5 or 6 times. For minimum eyebrowing, use J-490 with revolving clearers.

**ACCOTEX NC-727** . . . A cork-loaded synthetic rubber cot that combines the superior drafting properties of cork with the long life of rubber. Because of the cork content, NC-727 produces less eyebrowing than any other synthetic cot. It will not slick up and drafts a more uniform and stronger yarn. May be rebuffed for extra service lives. Used with flat clearers. Whether you are spinning cotton, wool, or synthetic fibers, Armstrong can supply you with a cover especially formulated for the job. Your Armstrong representative will gladly arrange a test installation in your mill. These coverings are available for export.

**ACCOTEX COTS**
**CORK COTS**




# won't grow or stretch

## Armstrong's interliner prevents stretching

You don't have to worry about stretching or growing when you use Armstrong's Accotex® Aprons on your frames. Accotex Aprons are reinforced by a cord interliner developed exclusively by Armstrong.

This interliner prevents stretching, keeps tension constant, and helps spin even, strong yarn of high quality. Even after years of constant service in the mill, Accotex Aprons still fit snugly on the form on which they were made.

Accotex Aprons wear longer, too. Heavy layers of tough synthetic rubber enclose the cord interliner and provide a tough wearing surface on both inside and outside of the Apron. Because the rubber is ground to the exact thickness you specify, there are none of the dimensional variations found in natural products.

There are no seams in Accotex Aprons to crack or tear open. Neither will these aprons scuff nor abrade.

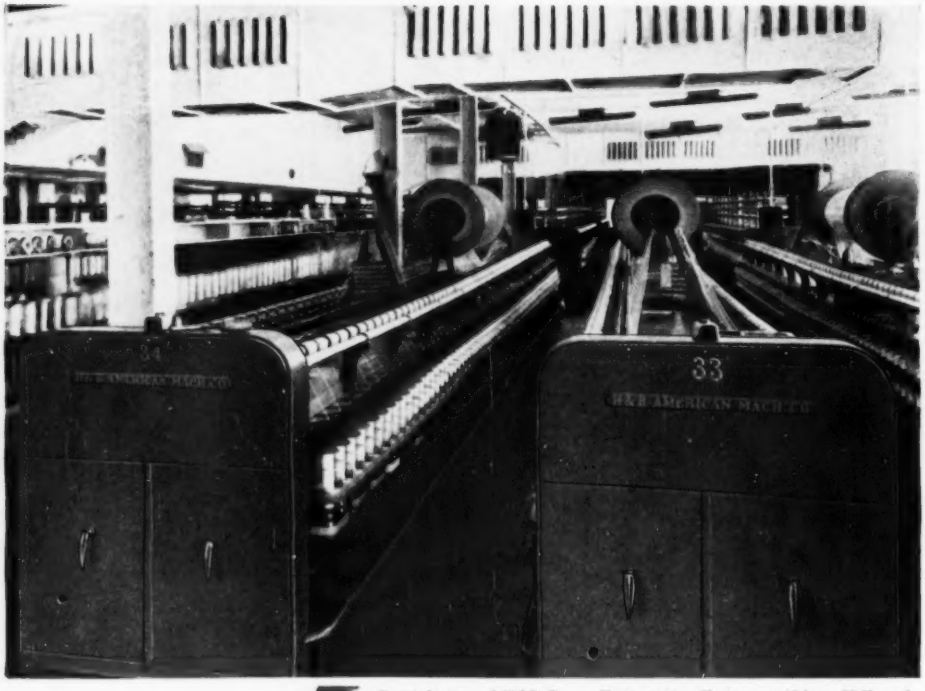
They run cleanly with reduced waste. They are not affected by oil, temperature changes, or humidity, and they perform with a minimum of lapping.

Ask your Armstrong representative for free samples, prices, and additional information on Armstrong's Accotex Aprons. Available in sizes for both single and double apron types. Armstrong Cork Co., Textile Products Dept., 8303 Arch Street, Lancaster, Pa.

**ARMSTRONG'S ACCOTEX APRONS**

# *Perfect Twist is Required*

## SO IT'S H&B BEAM TWISTERS




Partial view of H&B Beam Twister installation at Aldora Mill, subsidiary of The General Tire and Rubber Company, Barnesville, Ga. There are 40 twisters in all, 5½" gauge, 4" dia. rings, 8" traverse, 160 spindles per frame.

THE Aldora Mill is running rayon yarn for tire cord, and perfect twist is an absolute necessity. Therefore, it is significant that H&B Beam Twisters were selected to do the job. The supply package of these machines is a beam instead of the customary cone or tube. They also have case hardened double line bottom rolls and single line top rolls. Beam stands are equipped with ball bearings and a brake assembly which assure uniform and even tension let off.

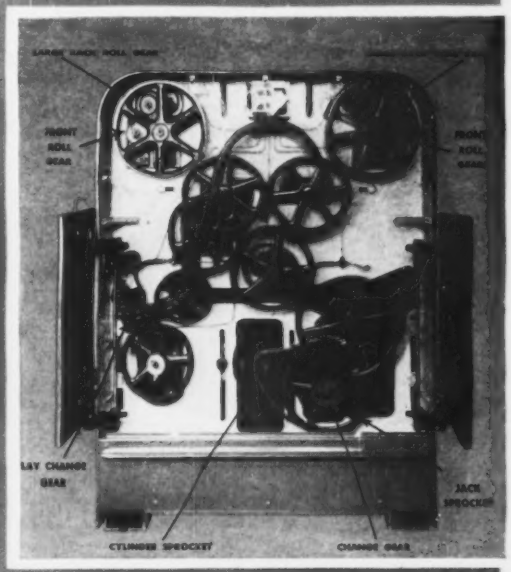
The superstructures of H&B Beam Twisters are built to accommodate one or more beams as necessary. Thus, if a mill is running two beams equally divided between the head end and the foot end of the frame, it can easily shift to single beam operation by moving one set of beam stands to the center position.

# Why Quality Yarn Mills like H&B Beam Twisters

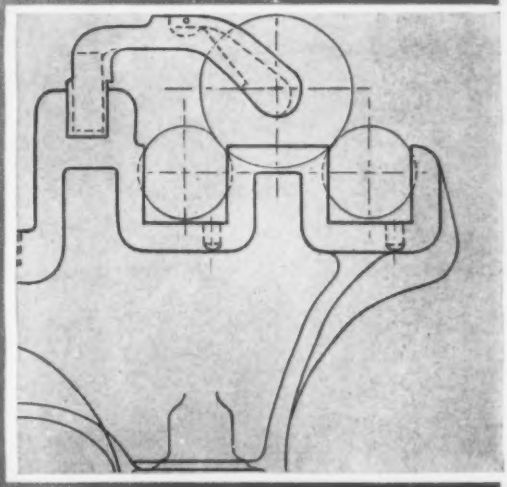
1. May be equipped to twist wet or dry.
2. Anti-friction tape tension pulley helps to maintain constant spindle speed.
3. Ball bearing thrust washer in builder drive prevents dwelling at top and bottom of stroke and builds a better supply for high speed winding.
4. Silent chain drive from cylinder to jack shaft.
5. Replaceable bottom roll bearings to reduce maintenance cost.
6. Anti-friction bearings on cylinders to save power and maintenance.
7. Bijur lubrication system.

Tell us your twisting requirements, and let us recommend an installation.

Head end of machine, showing Bijur lubrication system and silent chain drive from cylinder to jack shaft.




Cross section of roll stand, showing double line bottom rolls and single line top roll.



**H&B AMERICAN MACHINE CO.**

*Builders of Modern Textile Machinery*

FACTORY, EXECUTIVE OFFICES AND EXPORT DIVISION • PAWTUCKET, R. I., U. S. A.

BRANCH OFFICES:—ATLANTA, GA., 913 Citizens and Southern National Bank Building, CHARLOTTE, N. C., 1201 Johnston Building

## Linit Fashion Show On Starched Cottons Set For February 2

The Linit Division of Corn Products Co. will stage a big fashion show, featuring starched cottons, in the Grand Ballroom of the Waldorf-Astoria on Feb. 2, it was announced yesterday. Fifteen top designers will each create three summer costumes keyed to the theme, "Fashion Accents Crisp." This is the first time a starch firm has ever staged such a promotion.

Plans are being made to accommodate more than 1,000 guests, including fashion editors, buyers ready to wear and grocery executives, laundry executives, domestic science officials, laundry executives, dietitians, faculty and national personalities, it was stated.

W. H. Gamble, president of Corn Products Sales Co., pointed out that the object of the promotion is to increase the use of starch

## Corn Products Plans Starch Sales Drive

Officials of Corn Products Refining Co. at a press conference at the Biltmore Hotel here yesterday announced plans for a sales campaign for its "Linit" starch during 1949. Feature of the promotion will be a fashion show, first of its kind ever staged, at the Waldorf-Astoria on Feb. 2. A number of the nation's foremost fashion designers will create three outstanding summer costumes in starched cotton each for the style show.

Plans for the promotion were announced at yesterday's meeting by W. M. Gamble, president of Corn Products Sales Co., and Schmidt, vice president of Corn Products Refining Co., on the effects of the February show on the laundry industry. Fields M. G. Rollins of McKenna of the C. L. advertising agency for the company, also spoke on campaign plans.

## Textile Firms to Aid In "Crisp Look" Show

## Crisp Look Bows Today; RTW Scout Inspires a Song

## Crisp Look

(Continued from page 1)

fining Co., makers of Linit Starch, will foot the bill. They pick the Waldorf tab tonight too.

Meanwhile a large scale fashion offensive is being planned. Heavy master Arthur

## Fashion accents Crisp!

1949 SUMMER PRE VIEW

LINIT STARCH

# Smash-Hit All-Time

co-sponsored by the Corn Products Refining Company, producer of Linit, in the grand ballroom of the Waldorf-Astoria, Wednesday, Feb. 2, at 5 o'clock. New ideas in starchable cottons will be previewed by 18 foremost American designers. Maggi McNellis of radio fame will be the

26—The Berkshire Evening Eagle, Friday, Dec. 17, 1948

## It'll Be 'Crisp Look' Next

By LEO TURNER

NEW YORK (UPI)—It's going to be very easy for women stylish and ... experts said ... do is turn ... years, wash ... a tub of star...

Then be ... That was ... tion of Miss ... model and ma... hat made ... ful. Sure ... She's the ... signers wi... the 1949 fa... Be in a sh... shock the ol... ing around ... off.

Hemline Will ...

Want to kno... hemline is going ... Miss Suzi B... "It's coming ... she said. "The m... Want to show ... be silent?

"The crisp look" ... Do you want to ...

Never before such a flood of press, radio, television and newsreel raves as for the performance of "Fashion Accents *Crisp!*" produced by Corn Products Refining Company, makers of starches for the textile industry, at the Waldorf-Astoria Hotel's grand ballroom, February 2.

Featuring brand new summer fashions in starchable cottons by 17 leading dress designers, it formally introduced the "CRISP LOOK"—already accepted as THE fashion look for 1949.

## ...v of Starch About the New Cottons

NEW YORK HERALD TRIBUNE

The crisp look of summer cottons, due to arrive in stores in April, was glorified at a show yesterday in the Waldorf's ballroom. At left: Blue and black spider web cotton print used by designer Ceil Chapman for an after five o'clock dress. At right: Carolyn Schnurer's summer evening dress of white pique has wide lace inserts. Not too grand for soap and starch

## The 'Crisp Look' Dance

Doreen Morgan of Jackson Heights and Fred Horam of Astoria demonstrate the "crisp look" dance, named for the crisp look of the cottons that will be unveiled Feb. 2 at a Waldorf-Astoria fashion show. Arthur Murray, the maestro who created the dance, predicts that it will sweep the country.

## "Linit" Style Show Tie-Ups Announced

At a press conference yesterday the Corn Products Sales Co. makers of Linit, announced plans for a fashion show featuring the "crisp look" to be staged Feb. 2 at the Waldorf-Astoria in connection with the Linit Division's 1949 Feature Promotion. Theme of the show will mark the opening of a merchandising program stressing the freshness of starch and starchable cottons were enlarged upon and plans for promotions with textile firms, and ready-to-wear manufacturers in advertising, department store displays, and in grocery stores were summarized.

## *Just Between Us*

By CLARE LEWIS

**WILL IT BE THE 'CRISP LOOK' FOR SUMMER RATHER THAN THE OLD DRAPE?**

P. S. Department: Didja know that the trend for this summer's styles is towards starchable cottons? . . . so fashion authorities are saying . . . It's to be "The Crisp Look" . . . There are only about nine more days to get your entry in to the essay contest being sponsored by the New York City Federation of Women's Clubs . . . title must be Women's Contribution in the 20th Century," any member of a federated club is eligible and the awards include magazine subscriptions and books . . .

# Show Launches Top Promotion of Fashions in Cottons!

YORK WORLD-TELEGRAM, WEDNESDAY, DECEMBER
ines & Linage
'Crisp Look,' Coming Next in Fashion, To Be Sparked by Starch Maker
'Crisp Look' Makes Return
by Jean Spence
One of the nicer things
Linit's 1949 Drive to Be Kicked Off with Fashion Show
New York—Feature of Corn Products Refining Co.'s 1949 promotion of Linit starch will be a
Accent Is on Crispness At Starched Fashion Show
and its just the beginning
The "CRISP LOOK" of starchable cottons continues—and will continue to make headline news in the press, on the air, via television and newsreels, in fashion editorial copy . . . will be aggressively promoted by textile houses, dress manufacturers, magazines . . . in department store advertising the country over.
. . . and in the year 'round, full-color LINIT campaign in 16 national magazines with combined circulations of more than 24 million!
COTTON WITH A CRISP LOOK
THE NEW YORK TIMES.
DAILY MIRROR.
CRISP lounging costume, by Thea Teori, consists of a tie-ruffled, white eyelet peignoir and ruffled cotton pantaloons. From the Linit show.
Summer's new look, judging from the gala showing of warm-weather fashions at the Waldorf yesterday, will be crisp as a little girl's first party pinafore. Seventeen top designers were represented in the production "Fashions on Accents Crisp" sponsored by Linit Starch.
Spanking-starched cottons were starred in clothes for travel, beach and sports wear, lounging, cocktails and evening.
Pique beachcoats, denim pedal pushers, sarong-draped cabana outfits were all shown in starched versions. So were dressy cotton prints trimmed with net and [illegible]ndy, sun-back dresses with jackets, ball gowns of marquisette, organdy and printed pique.
Designers represented included Miss L. Brogan, Ceil Chapman, Jane Derby, Nelly Don,
You're Due to And Crackle Th
By GERTRUDE McALLISTER
Let's see now. What was it Bea Lillie
the March of Dimes fashion show—whe
her comment on the "crisp look" of
something like this: "You may not have t
u'll be stiff as a board!" Haw
But that's about the size of it
th our clothes remaining
tty much this season as they
re last year—though more
derate in length and width
skirt—the fashionists must
e something new to talk
t. And it is the 'crisp look.'
Taffeta, th
will probably
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BROOKLY
GLOBE STARCH
CORN PRODUCTS REFINING CO.
GLOBE DEXTRINES GUMS
CORN PRODUCTS REFINING CO. NEW YORK U.S.A.
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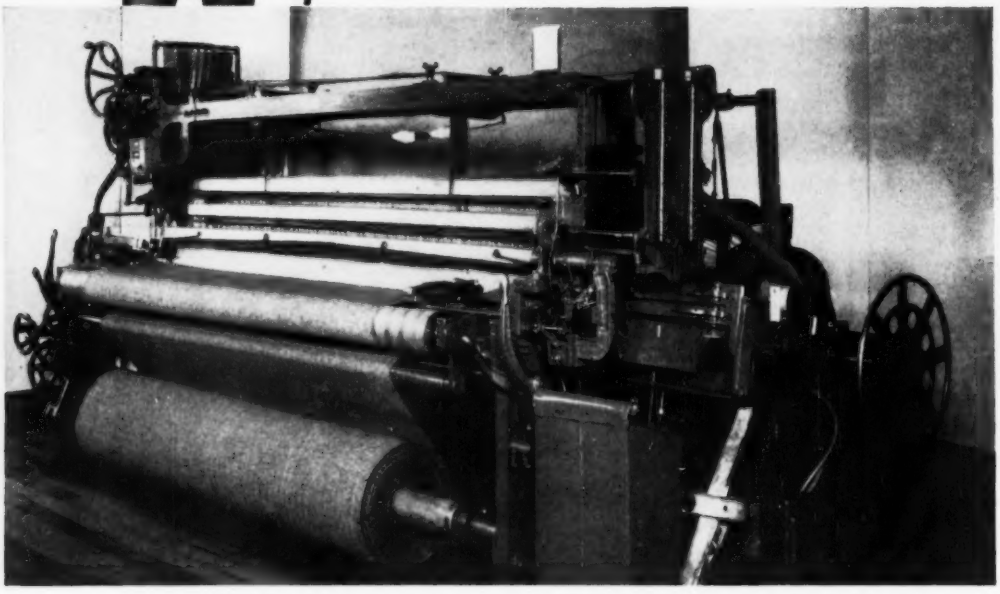
17 Battery Place, New York, N. Y.
STARCHES FOR THE TEXTILE INDUSTRY

# *NOW...* NEW VERSATILITY



## . . . in these *NEW C&K W-3 ALL-PURPOSE LOOMS*

Like any Olympic Decathlon winner, this new W-3 was challenged to prove itself the top performer in many different competitive tests.

Now, thoroughly proven by these tests, here is the world's most versatile loom for weaving worsted, woolen or blended fabrics. No other loom can offer the advantage of:

**3-WAY CONVERTIBILITY**

This W-3 All-Purpose Loom may be run as:

1: A 4 x 1 box automatic bobbin-changing loom, *or*

2: A 4 x 4 box non-automatic loom, for pick-and-pick work where as many as 7 colors of filling may be called at will . . . *or*

3: A 4 x 2 box automatic bobbin-changing loom, for mixing filling a single pick at a time from 3 shuttles running in rotation. For fabrics with contrasting warp and filling, or other work where uneven appearance is hard to avoid.

Conversion is quick and easy, from one to the others of these three forms of operation. So mills are now better able than ever before to meet swiftly changing market conditions. Write for full information, and watch this space for other exclusive advantages of the new C&K W-3 All-Purpose Looms.

**CROMPTON & KNOWLES LOOM WORKS • Worcester 1, Mass.**

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. • CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics.

**Gulf Lubrication Engineers recommend**

# GULFGEM OIL

Superrefined by Gulf's exclusive Alchlor Process, Gulfgem Oil has unmatched resistance to oxidation and sludge deposits. Thus Gulfgem lasts longer in spindle service — users report that it outlasts spindle oils by as much as four to five times.

With good operating practice Gulfgem Oil reduces frequency of cleaning bolsters. Cleaner spindles and bolsters insure substantial savings in power costs!

Gulfgem Oil has outstanding lubricating qualities—insures less wear, fewer spindle and bolster renewals, and greater freedom from spindle wobble.

Call in a Gulf Lubrication Engineer today and ask him to explain the many advantages of Gulfgem Oil. This superior spindle oil is available in four grades with the proper range of viscosities for every type of high speed spindle. Write, wire, or phone your nearest Gulf office.

**Gulf Oil Corporation · Gulf Refining Company**

*Division Sales Offices:*

**Boston · New York · Philadelphia · Pittsburgh · Atlanta**
**New Orleans · Houston · Louisville · Toledo**

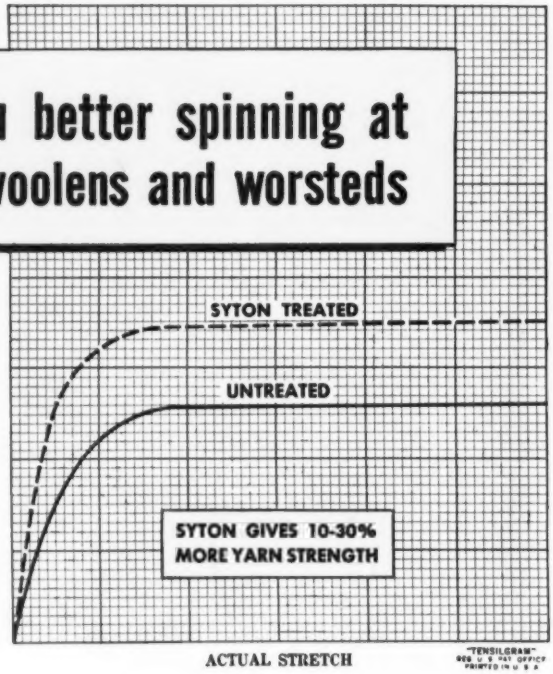
GULF INDUSTRIAL LUBRICATION

# FOR YOUR INFORMATION

Henry L. Scott Co. Providence, R. I., U. S. A.

## SYTON gives you better spinning at LOWER COST with woolens and worsteds

**Laboratory tests and actual field experience show Syton gives 10-30% more yarn strength in woolen and worsted spinning**


SYTON TREATED
UNTREATED
SYTON GIVES 10-30% MORE YARN STRENGTH
ACTUAL STRETCH
"TENSILGRAM" REG. U. S. PAT. OFFICE PRINTED IN U. S. A.

**This added yarn strength means:**

**FASTER PRODUCTION:** Because of increased yarn strength, the amount of twist can be reduced and production speeded.

**LOFTIER YARNS:** Less twist means loftier yarns, with tensile strength equal to or better than the strength of untreated yarns of higher twist.

**HIGHER COUNTS:** Closer to limit spin—for most grades of stock can be attained with Syton-treated yarns.

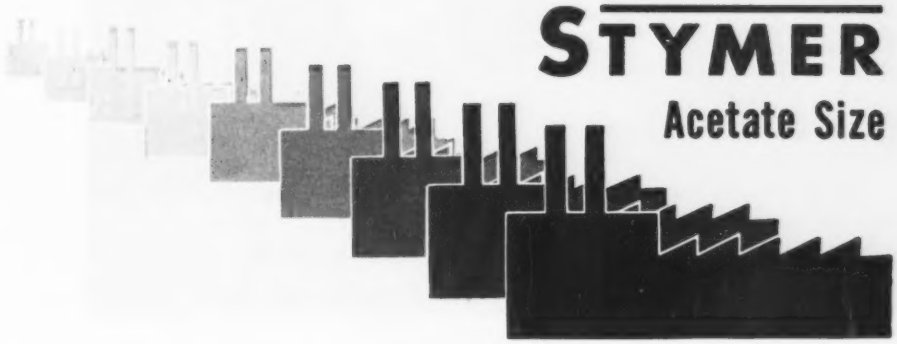
**FEWER ENDS DOWN:** Reductions vary from 25% to 50% depending on the grade of wool.

**BETTER SPINNING EFFICIENCY:** Syton produces more uniform yarn with less beard and thin spots, reduced fly waste, and better drafting.

**WHAT SYTON IS:**

Syton is a colloidal dispersion in water of submicroscopic silica particles which are deposited on the fibers, increasing fiber friction. The improved fiber "drag" increases yarn strength, results in better, more uniform draft control.

# Already standard in more and more mills



# STYMER
## Acetate Size

Even though our production was limited in 1948, more than half a billion yards* of acetate fabric have been woven from Stymer-sized warps! Now, more and more mills are adopting Stymer every week. Mill owners are enthusiastic because this new synthetic sizing agent gives warp superior protection over a wide range of humidities and temperatures . . . makes weaving easier on the loom.

Here's how Stymer delivers:

1. Forms tough, smooth, flexible film
2. Reduces static electricity troubles
3. Increases operational efficiency
4. Easy to apply
5. Produces more uniform film on yarn
6. Easy to scour from the woven fabric in warm water containing a mild detergent.

Remember:

**IN SLASHING,** Stymer does not stick to uncovered dry cans, stops static electricity troubles, separates easily at the lease rods, does not gel in the pipes or size box.

**IN WEAVING,** Stymer-sized warps exhibit little or no shedding, maintain yarn twist, have fewer end breaks.

Clip the coupon below for full information on this amazing new sizing agent for acetates, Stymer.

*Based on estimated average weight of goods sized with tonnage of Stymer sold
Syton, Stymer Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS — PLASTICS

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DIVISION
Desk TWT-15, 140 Federal Street, Boston 10, Mass.

*Please send me information on* ☐ *Stymer,* ☐ *Syton.*

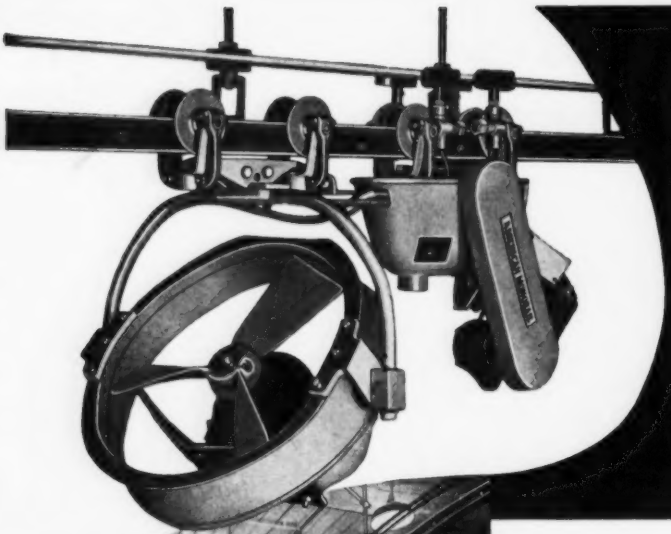
Name _____ Title _____

Firm _____

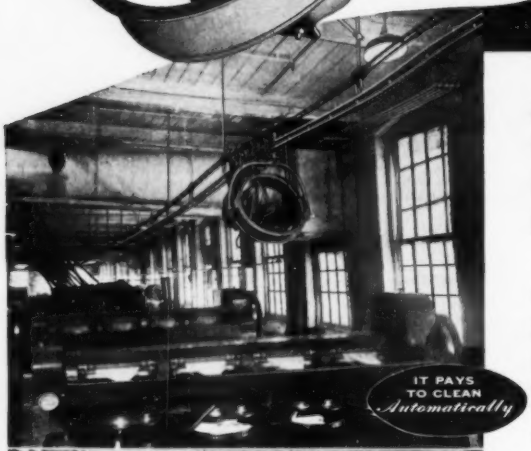
Address _____

City _____ Zone _____ State _____

SERVING INDUSTRY . . . WHICH SERVES MANKIND



# Keep Ceilings Clean with AUTOMATIC CEILING CLEANERS



***No Labor Cost***
***No Production Loss***
***No Ladder Accidents***
***No Fire Hazard***

At a recent meeting of textile executives, twenty-four mills reported most common practice of blowing down ceilings once every twenty-four hours with frames running, or once a week when idle. This means lost production when the machines are shut down under the cleaners or extra time for cleaning labor.

**ONE MILL REPORTED EXCELLENT RESULTS WITH AUTOMATIC CLEANERS!** Our engineers can show you how a simple high-velocity traveling fan unit can eliminate your ceiling cleaning problem entirely. Systems have been operating well over a year without blow down.

Write for copy of Bulletin CB-3 describing all the latest developments in Automatic Cleaners for Textile Mills.

**THE AMERICAN MONORAIL COMPANY**

13108 ATHENS AVENUE — CLEVELAND 7, OHIO

*Trade is benefiting from shorter sailing time from fields of the south to mills of the north.*
*THE ISELIN DIARY, 1825*

THE BETTMAN ARCHIVE

# Bridging the gap from bale to sale

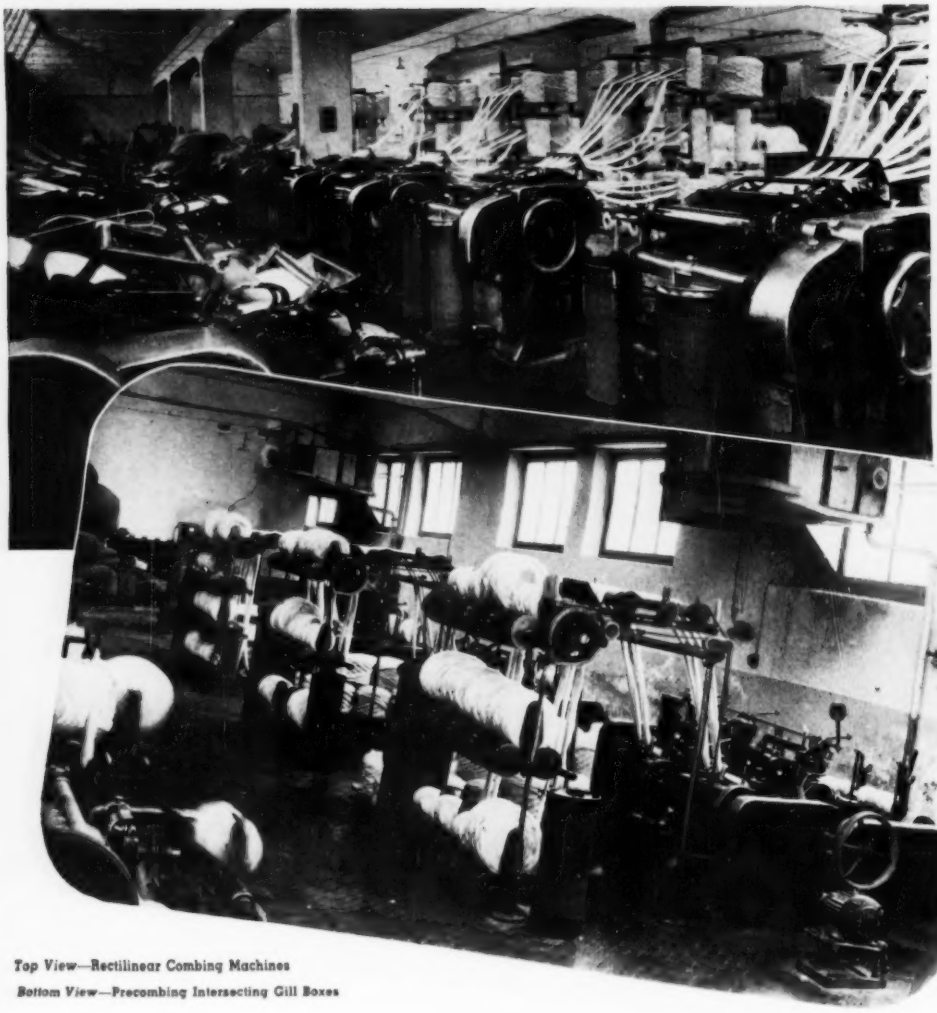
Yes, new markets and new methods meant *more* goods had to move *faster*—and they did. But it was still a long *financial* stretch from raw material to cash customer—one that many manufacturers bridged through the Factoring service of the firm of Iselin. . . . Today, Iselin Financing can help you, too—by converting accounts receivable to cash to help you take discounts, carry inventories, expand sales. It also relieves you of credit risks and losses. . . . Long experience, and methods proved by the success of our clients are at your service to help you expand your business with security.

Send for booklet on our Factoring service to industry.

## William Iselin & Co., Inc.

*357 Fourth Avenue, New York 10, N. Y.*

*FOUNDED IN 1808*



*Top View*—Rectilinear Combing Machines
*Bottom View*—Precombing Intersecting Gill Boxes

**We manufacture a complete line of machines for combing and spinning of worsted yarn on the Continental System.**

*25 Years Experience. Our Machines Are Running in Hundreds of Mills All Over The World.*

OSA

# *Officina Meccanica*

SANT'ANDREA—NOVARA, ITALY

Exclusive Agents for U.S.A. **ERNEST L. FRANKL ASSOCIATES,** 22 East 40th St., New York, U.S.A.

# MEASURING SATISFACTORY PERFORMANCE

## . . . IN EVERY TEST!

**QUAKER PACKINGS ARE "PRE-TESTED" TO ASSURE PERFECT FIT, LONG LIFE IN EVERY TEXTILE INSTALLATION**

Packings to be efficient must be perfect in fit . . . must form a tight seal in pumps, flanges, valve stems, piston rods to prevent leaks . . . must be of exact quality to meet the exacting operating requirements of textile equipment.

That's why Quaker Packings are "pre-tested." Carefully calipered for size and fit . . . painstakingly checked for quality. Above we see the final test, one of many pre-tests Quaker Packings must go through before they are ready for use. Tests that are safeguards against costly leaks, troublesome shut-downs, loss of production.

There's a Quaker Packing for every type of equipment and service in the textile industry—water, air, oil, steam at extreme temperatures . . . all pre-tested for peak performance.

**HOSE THAT LASTS**

. . . because it has been pre-tested to stand pressure and resist heat. Quaker Hose is available for use with air, water, steam, volatiles and gases.

**FOR PEAK POWER**

Quaker Belts are made to fit every requirement of the textile industry. Flat belts . . . V belts . . . all types, sizes and construction . . . all pre-tested to assure peak efficiency and maximum production.

**QUAKER RUBBER CORPORATION**

PHILADELPHIA 24, PA. • New York 7 • Cleveland 15 • Chicago 16 • Houston 1

Western Territory

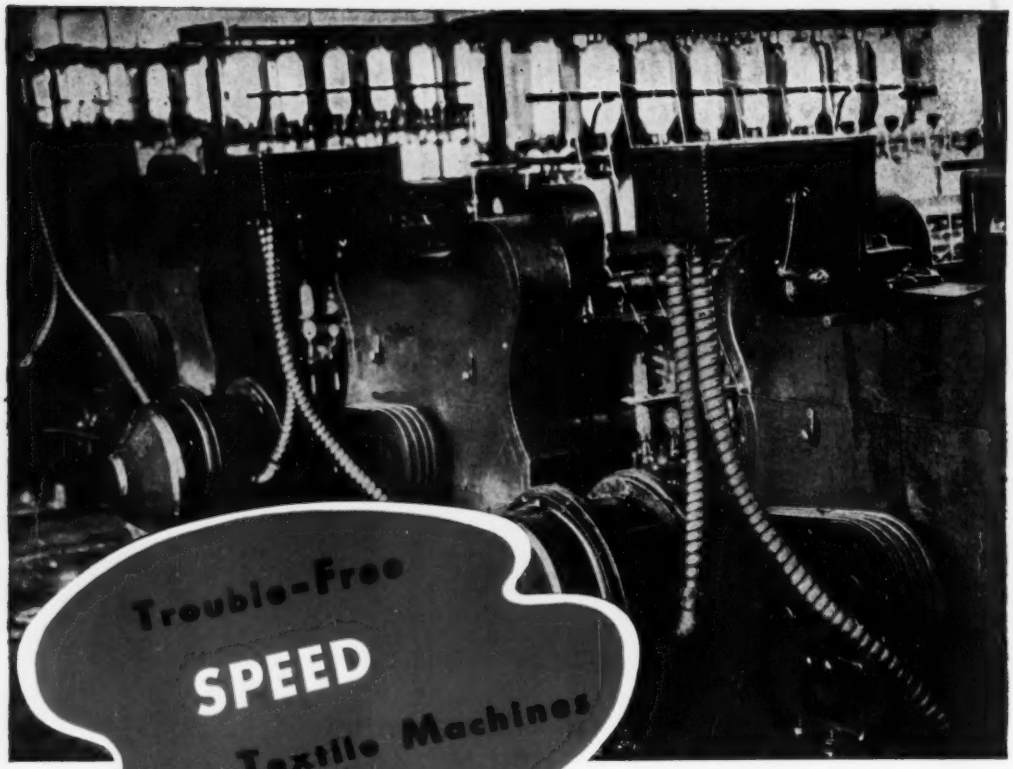
QUAKER PACIFIC RUBBER CO. • San Francisco 10 • Los Angeles 21 • Seattle 4

# QUAKER

## RUBBER PRODUCTS

QUALITY BELTS GUARANTEED PHILADELPHIA, PA. QUALITY SINCE 1885

REG. U. S. PAT. OFF.




## . . . with *Condor* Whipcord V-Belts

Manufacturers of all types of machinery are relying on Manhattan's method of engineering V-belts to meet their requirements for original equipment.

Condor Whipcord V-Belts embody 8 Points of Balance. Their principal advantage lies in the endless-wound Strength Member of strong, pre-stretched Whipcords that ride in a cushion of slow-aging, heat-dissipating Flexlastics. The performance of this construction is satisfactory under all conditions. Condor Whipcord V-Belts have a wide margin of tensile strength and resistance to distortion and wear.

V-Belt Bulletin 6868-B gives more details of this long-wearing construction and includes helpful tables. Ask for your copy.

*Manhattan's line of rubber products for the Textile Industry is consistently dependable—outstanding in quality. Make MANHATTAN your choice.*

("Flexlastics" is exclusive with Manhattan)

**RAYBESTOS-MANHATTAN INC.**

*Keep Ahead with Manhattan*

**MANHATTAN RUBBER DIVISION** **PASSAIC, NEW JERSEY**

# High Production AXMINSTER CARPET LOOMS

The simplest in operation and the highest production loom of its type IN THE WORLD

**The ingenious split shot method of inserting foundation fabric weft in the Platt loom gives an added advantage to the Axminster type of weaving by reducing costs of manufacture and greatly increasing loom production.**

| Standard Widths | Recommended Speeds | Standard Widths | Recommended Speeds |
|---|---|---|---|
| Wide Looms: | | Narrow Looms: (continued) | |
| 10/4 | 19 rows of tufts per min. | 27 inch | 28 rows of tufts per min. |
| 12/4 | 18 rows of tufts per min. | 32 inch | 27 rows of tufts per min. |
| 14/4 | 17 rows of tufts per min. | 36 inch | 26 rows of tufts per min. |
| 16/4 | 16 rows of tufts per min. | 45 inch | 25 rows of tufts per min. |
| Narrow Looms: | | 48 inch | 24 rows of tufts per min. |
| 18 inch | 30 rows of tufts per min. | 54 inch | 23 rows of tufts per min. |
| 22 inch | 29 rows of tufts per min. | | |

**These speeds are approximately 33⅓% greater than those used for double needle double insertion looms.**

**We shall be happy to supply further information on request.**

# Platt Bros. (SALES) LIMITED.

## OLDHAM, ENGLAND.

TELEPHONE MAIN (OLDHAM) 3 8 8 4

TELEGRAMS TEXTILMAK OLDHAM.

MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF PLATT BROTHERS & CO LTD HOWARD & BULLOUGH LTD

DOBSON & BARLOW LTD BROOKS & DOXEY LIMITED ASA LEES & CO LTD

# *Atkinson, Haserick & Co.*

BUSINESS ESTABLISHED 1823

IMPORTERS—DEALERS—MANUFACTURERS

## TEXTILE MACHINERY

*REPRESENTING*

**Prince Smith & Stells, Ltd.**
Bradford System Worsted Machinery
Preparers, Backwashers
Noble Combs, Intersecting Gills
Open and Cone Drawing
Cap, Flier or Ring Spinning and Twisting
Magnum Spinning and Twisting
Heavy Woolen Twisters
Fancy and Rayon Twisters

**Societe Alsacienne De Constructions Mecaniques**
French System Worsted Machinery
Wool Washing, Worsted Cards
High Product Wool Combs
Intersecting Gills, Melangeurs
Bobinier Intersectings
Differential Driven Mules
Ring Spinning and Twisting

**Taylor, Wadsworth & Co., Ltd.**
Wool Washing, Drying, Back Washing
Noble Combs

**Platt Bros., Ltd.**
Wool Opening, Washing and Drying Machinery
Woolen and Worsted Carding Engines
Woolen Spinning Machinery

**Holdsworth Gill Screw Co., Inc.**
Intersecting Gill Box Changeovers
Holdsworth's System Gill Screws and Fallers
Holdsworth Gill Reducer

**Standard Fabricators**
Manufacturers of Obermaier and Stienen System
Dyeing Machinery for Cotton Raw Stock,
Skein, Beam and Packages
Wool Raw Stock, Top, Skein and Packages
Rayon Skein, Packages and Top
Stienen Patent Combination Extractor Drier

**Thomas Broadbent & Sons, Ltd.**
Hydro Extractors, Yarn Curling Machines

**HACOBA Automatic Filling Winder**
High Speed Shuttle Bobbin Winder
Automatic Braider Bobbin Winder
Narrow Fabric Bobbin Winder

**William Ayrton & Co., Ltd.**
Automatic Spooling, Winding and Balling Machines

**The Centrif-Air Machine Co., Inc.**
Cotton Cleaning and Distributing System

## MILL SUPPLIES

*INCLUDING*

Comb and Gill Leather Aprons
Cotton Mule Rope
American and English Bobbins
Wooden Thread Spools
Hearlcrowne Brand Emery Fillet
Card Clothing of All Descriptions
Mule Rope, Braided Spindle Banding
Spinning and Twisting Tape and Bands
Condenser Tapes and Aprons
Comb and Gill Pins, Kaye's Oil Cans
Roller Chain and Sprockets
Textile Parchment
Roller Felt and Rub Aprons
Clearer Plush, Emery Cotts
Spinning and Twisting Rings
Spinning and Twisting Change Gears
Caps, Tubes and Spindles
Drawing Spindles and Fliers
Arragg Spindle Lubricators
Courtney-Jensen Ball Bearing Top Rolls
Columbian "Nylon" Mule Rope

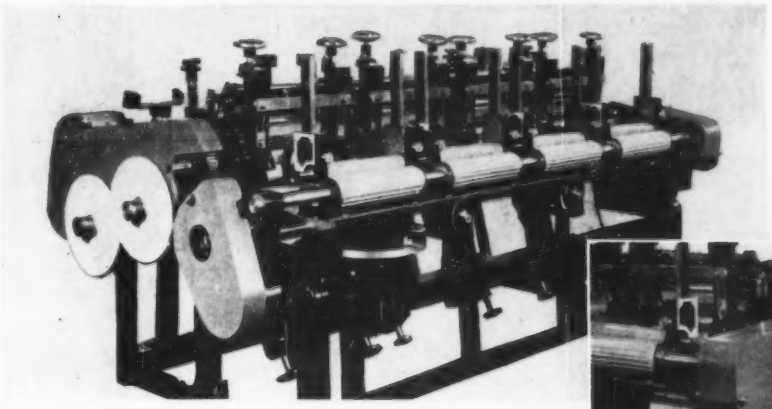
**211 CONGRESS STREET**
**BOSTON 6, MASS.**

**8 CURRER ST.**
**BRADFORD, ENG.**

# HOLDSWORTH GILL SCREW CO., INC.

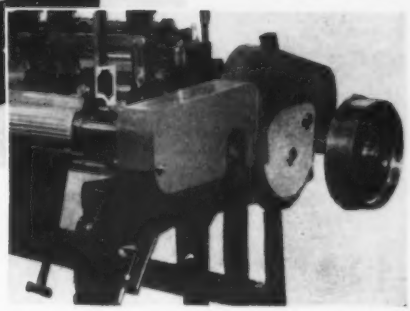
*Manufacturers of*

## SINGLE AND MULTIPLE HEAD
## INTERSECTING GILL BOXES



**4 HEAD**
**4 BALL**
**Intersecting**
**Holdsworth**
**GILL BOX**

**Below:**
**DRIVE END**



*Particularly adapted for*

**BACKWASH AND DYE HOUSE GILLING**

*Equipped with*

## HIGH SPEED HOLDSWORTH INTERSECTING GILL SCREWS
## AND
## PATENTED HOLDSWORTH INTERSECTING FALLERS

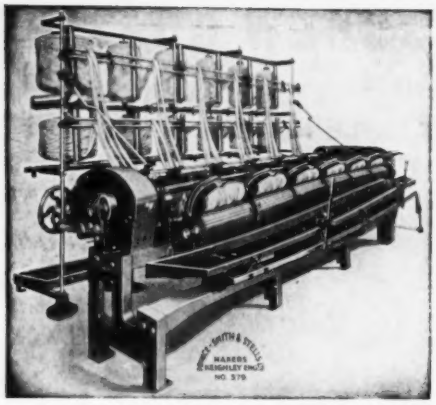
• *Also Available for Prompt Delivery* •
*For all makes of intersecting Gill Boxes*
*Saddle Blocks • Conductors • Bearings (all types)*
*Complete False Twist Motion Assemblies*
*Saddles • Water Motions Calender Rolls*
*and other Parts and Accessories*

• *SOLE SALE AGENTS* •

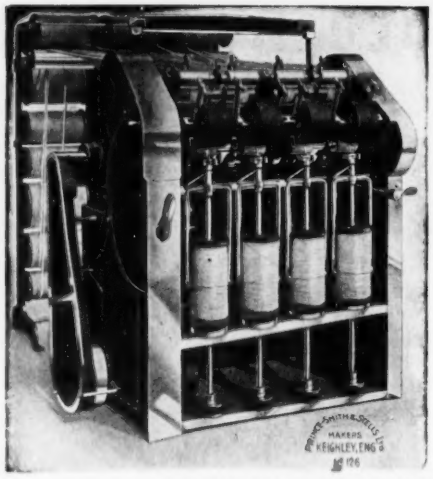
*Atkinson, Haserick & Co.*

BUSINESS ESTABLISHED 1823

**211 CONGRESS STREET** **BOSTON 6, MASS.**



● ANGLO-CONTINENTAL DRAWING BOX

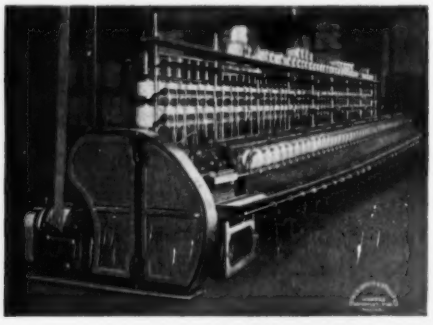


● ENGLISH DRAWING BOX

*We manufacture Machinery capable of producing all types of*

# worsted yarns

ENGLISH, ANGLO-CONTINENTAL & CONTINENTAL SYSTEMS



● FRENCH DRAWING BOX

*When you are considering extensions or alterations to your plant may we have the pleasure of offering you our services?*

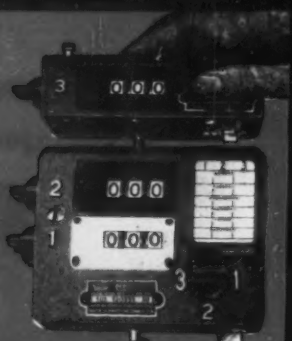
**PRINCE-SMITH & STELLS**
LIMITED
INCORPORATING TAYLOR WORDSWORTH & CO LTD.
KEIGHLEY — ENGLAND

P.S.S. 2

Agents, U.S.A. and Canada.
English System Machinery.
Atkinson, Haserick & Co.
211 Congress Street
Boston, Mass.

Agents, U.S.A.
French System Machinery
The Blake Electrical Manufacturing Company
178 Atlantic Avenue,
Boston 10, Mass.

Worm-driven Counter for recording linear units.



Cut Meter for pre-determined doffing of looms.

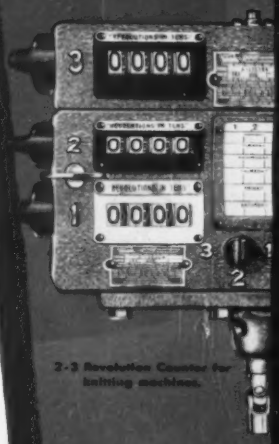
Hand Tally Counter for checking cardroom, loom looms, etc.

# You can COUNT on VEEDER-ROOT ...all through your mill

For looms, frames, or knitting machines . . . for recording picks, cuts, hanks, revolutions, linear units, or whatever *you* want to count . . . there are direct-reading Veeder-Root Counters for the job you need done.

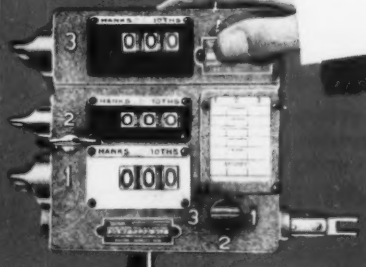
Here are some of the standard Veeder-Root Textile Counters shown in Catalog T-48. And if it takes a *special* counter to fill your bill — then's when it pays to remember that Veeder-Root has the longest engineering experience, plus the most modern plant and resources, to work your problem out most speedily and successfully. Yes, on *any* counting problem, *it pays to count on Veeder-Root.*

2-3 Convertible Pick Counter for recording loom output.



Clutch Speed Counter for checking speeds of loom crankshafts, spinning frame shafts and front rolls, etc.

2-3 Revolution Counter for knitting machines.



2-3 Convertible Hank Counter for frames, slubbers, speeders, twisters, etc.

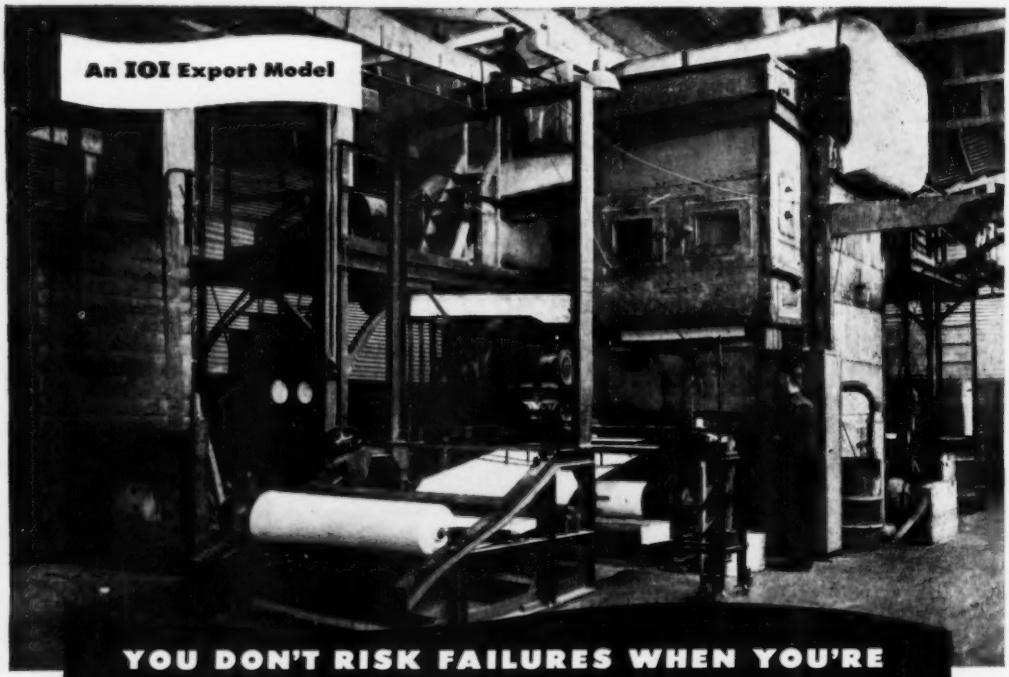
New No. 1248 Magnetic Counter (AC or DC) used as totalizer on carpet looms, for counting pill box stops; also used on bobbin strippers and other machines.

New No. 1260 General-Purpose Counter for counting strokes, revolutions, etc.

*In Canada:* Veeder-Root of Canada, Ltd., 955 St. James Street, Montreal 3
*In Great Britain:* Veeder-Root Ltd., Kilspindie Rd., Dundee, Scotland

Booth 315
Knitting Arts Exhibition
Atlantic City, N. J., April 25-29

**VEEDER-ROOT**
INCORPORATED
HARTFORD 2, CONNECTICUT • GREENVILLE, SO. CAROLINA




YOU DON'T RISK FAILURES WHEN YOU'RE

# 11,000 Miles Away

FROM YOUR SOURCE OF SUPPLY

THE Olympic Tire and Rubber Co., Ltd., West Footscray, Victoria, Australia, has every reason to be extremely particular about the dependability of its tire fabric latexing machines. When you're halfway around the world from the manufacturer of such vital equipment you've got to be *sure* of troublefree performance day after day, year after year.

That's why Olympic uses IOI fabric latexing machines.

Men who know fabric latexing will readily appreciate the rugged construction of every element in the IOI export unit shown above in operation at the Olympic plant—its tensioning control, its drying circuit, its fabric handling. Such construction is typical of IOI fabric latexers whether export units like the above or large high speed calender train systems handling fabrics 78 inches wide at speeds of 60 yards per minute and faster.

Heat at Work...in CONTINUOUS OPERATIONS

If you have a problem in this field it will pay you to consult IOI. We'll send detailed information or a sales engineer will call, as you prefer.

FABRIC COATERS AND SYSTEMS • HI-SPEED CONVECTION SLASHERS • LOOP AND FESTOON DRYERS

CAKE AND SKEIN DRYERS • CONSTANT TENSION WINDUPS AND UNWIND MACHINES

**INDUSTRIAL OVENS, INC.**

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES' DAY MACHINERY LTD., LONDON W.1, ENGLAND

# What makes a Customer

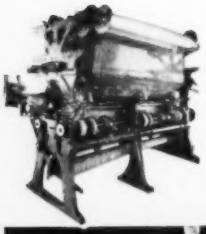
sure of quality in a knitted product? Fine knitting is one of the most important factors. It tips the scales in countless sales. To produce such knitting, fine needles *must* be used. That's why leading mills throughout the world rely on Torrington Latch Needles—the quality needles made by advanced precision methods. To safeguard your knitting quality, insist on Torringtons in the Red and Green Box.

**THE TORRINGTON COMPANY**

TORRINGTON, CONN., U.S.A. *Established 1866*

*Branches:* New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis • Toronto, Canada
*Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, California. In England: Broadgate House, 7-10 Eldon Street, London E. C. 2.

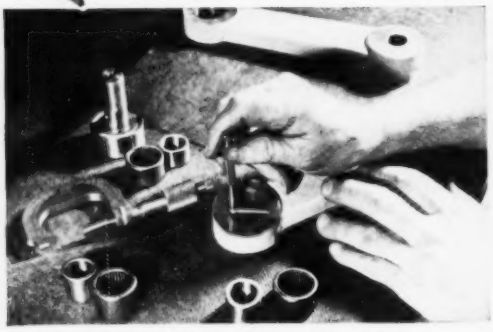
## There's a TORRINGTON Needle for every type of Knitting!



# *Torrington Needle Bearings increase*

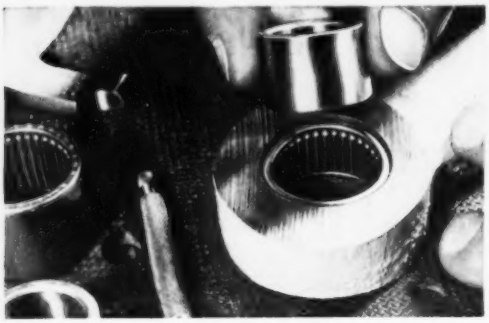
# *Precision and Speed*

## *of Kidde Knitters*

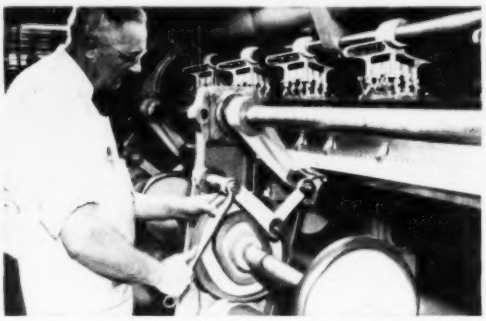


Precise action of Raschel-Type Warp-Knitting Machines made by Kidde Manufacturing Company begins with a design using 18 Torrington Needle Bearings. In the lifter bar assembly, 4 Needle Bearings assure close tolerances with less machining of related parts.

Needle Bearings not only simplify fabrication, but are also less expensive to install. The self-contained units are easily pressed into place with an arbor press. The design of the assembly is simplified since the bearings need no retaining devices.



Close-up of capacity and precision! Torrington Needle Bearings and Cam Followers handle rotating and oscillating motion very efficiently, thanks to the large area of roller contact surface, precision inner races and effective lubrication.



Lifter bar assembly, being installed above, activates the needle bar for speeds of 100 to 400 courses a minute. In this and the other applications to Kidde Knitters, Needle Bearings reduce friction and help maintain accuracy of knitting action.

In equipment you build or operate, Torrington Needle Bearings can pay their own way . . . in fabricating and assembly savings . . . in high operating efficiency. Our engineers will gladly work with you to adapt them to your requirements. Write us today, THE TORRINGTON COMPANY, Torrington, Conn. or South Bend 21, Ind. District offices and distributors in principal cities.

**TORRINGTON** *NEEDLE* **BEARINGS**

**Needle • Spherical Roller • Tapered Roller Straight Roller • Ball • Needle Rollers**

## NO ICE REQUIRED
## for Fresh Seafood Shipments

One of the most significant packaging developments in the last decade is the H & D INSULPAK*, a corrugated box in which coast-to-coast airborne shipments of pre-cooled foods are made possible—*without refrigeration*. INSULPAK now makes all America a vast potential market for seafoods of all kinds. Daily delivery of fresh, perishable foods everywhere is now accomplished by this new, insulated package. It is hoped that it will soon be available for wide-scale distribution.

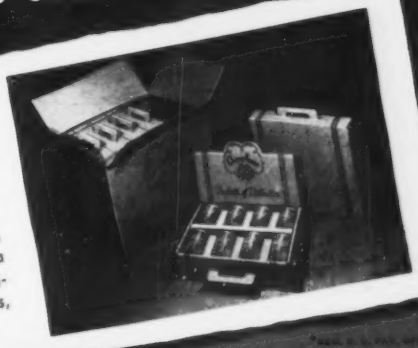
## This Shipping Box
## TELLS and SELLS

Here's the famous Duplex shipping-display box developed by H & D for those manufacturers who wish to display their products—effectively and economically—at point of sale. It's a regular corrugated shipping box which the dealer opens to form a colorful counter display with a sales message that attracts attention and makes people buy. The H & D Duplex shipping-display box protects your product in shipment—sells your product in the retail store.

*Good Packaging* MAKES GOOD PRODUCTS BETTER

## H & D PREPAK*
## Increases Unit of Sale

Many items, such as china and glassware, can be prepared at the factory into selling units that step up sales. Instead of selling one item at a time, Prepak* sells six, eight or twelve. Prepak promotes "take with" purchases, needs no repacking. The package illustrated contains a set of 8 glasses. It is made of light blue embossed corrugated board, printed in two colors, red and dark blue.



REG U S PAT OFF

H&D

BOXES

FOR MORE INFORMATION, WRITE

**HINDE & DAUCH**

*Authority on Packaging*

Executive Offices: 4906 Decatur St., Sandusky, Ohio

FACTORIES IN:

Baltimore 13, Md. • Buffalo 6, N. Y. • Charleston, Ontario Chicago 32, Illinois • Cleveland 2, Ohio • Detroit 27, Mich. • Gloucester, N. J. • Hoboken, N. J. • Kansas City 19, Kansas • Lonsdale, R. I. • Montreal, Quebec Richmond 12, Va. • St. Louis 15, Mo. • Sandusky, Ohio Toronto, Ontario • Waterbury, Conn.

*The Bahnson Company — Air Conditioning Contractor* • *P. L. Davidson — Consulting Engineer*

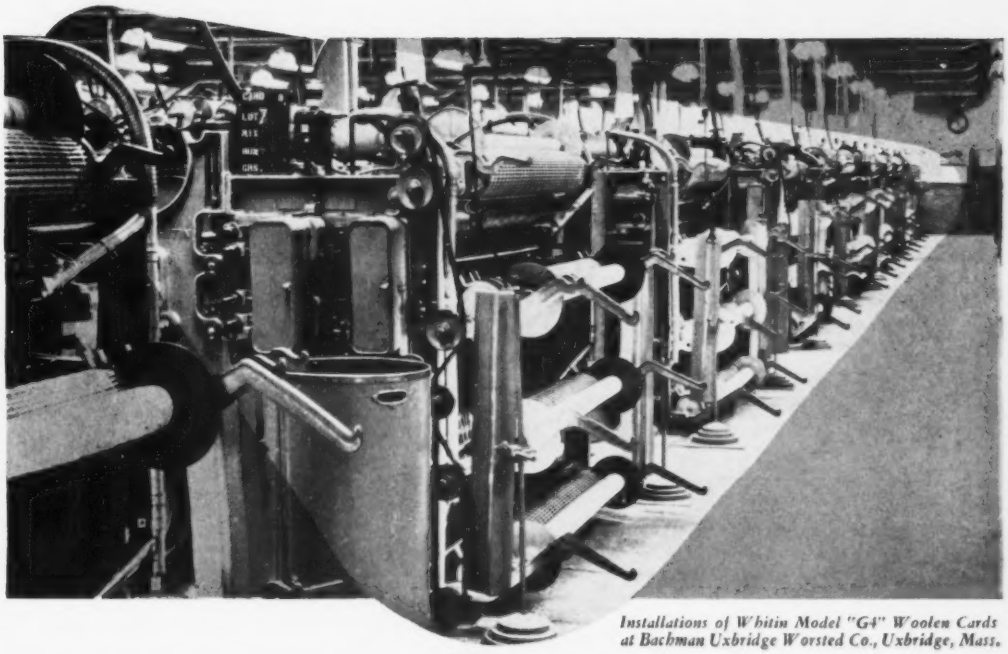
HONEYWELL Pneumatic Air Conditioning Controls contained in the Aspirator Box (pictured in the foreground above) are effectively controlling temperature and humidity in the spinning room of this large southern mill. The Grad-U-Stat (thermostat) makes use of a sensitive vapor-filled bellows as the temperature-sensing element. Mounting this instrument in the aspirator box provides for a free flow of air over the bellows and also a thoroughly tamper-proof construction. The Humid-U-Stat, also mounted in the box, is a hair-element humidity controller. Ambient air is continually drawn over the sensitive detecting element, which immediately corrects for changes and holds the humidity at the desired value without cycling.

Gain the advantage of Honeywell's many years of experience in the field of industrial and commercial air conditioning. Call on our control specialists to recommend the air conditioning control system best suited to your individual requirements. Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Toronto 12, Ontario.

**Humid-U-Stat Humidity Controller**

The Brown Instrument Division of Minneapolis-Honeywell supplies the Textile Industry with instruments and complete systems for the measurement and control of textile processes. Each unit of every control system is accurately co-ordinated with operating conditions to increase efficiency and production, and assure economical operation. They include controls for Slashers, Size Level, Size Temperature, Cylinder Temperature, Moisture Content, Continuous Bleach, Dyeing, Size Cooking and Storage, and many others.

MINNEAPOLIS Honeywell *Advanced Pneumatic Controls* FOR AIR CONDITIONING BROWN



*Installations of Whitin Model "G4" Woolen Cards at Bachman Uxbridge Worsted Co., Uxbridge, Mass.*

# CARD ROOM *Efficiency*

## . . . a Vital Cost Factor

WOOLEN mills today find themselves in a keenly competitive market—a market where proper analysis of all *cost factors* is of major importance. To keep abreast of such conditions it is imperative that all manufacturing operations be placed on the most efficient operating basis possible.

*Carding* is an *important cost factor* in the manufacture of woolen yarns. Not only is it important by itself, but also because of its cost effect on all subsequent operations through to finished yarn.

The importance of Card Room efficiency therefore should not be minimized. The quantity, quality, and continuous output of the Card Room sets the pace for the entire production of the mill. Impaired efficiency (and it is not always easy to detect) at this vital spot can easily lower the general efficiency of all other departments.

Why not discuss your carding problems with a Whitin representative? He will be glad to explain how Whitin Model "G4" Woolen Cards effect definite savings through greater production, better quality and increased efficiency with low maintenance and "down time". Write today for illustrated catalog of Whitin Card Room Machinery.

**Whitin MACHINE WORKS**

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.

*The First of a Series of New Knitting Machines*

*Designed to Expand Your Hosiery Market*

# SCOTT & WILLIAMS *Announces*

## the New Infants' Komet Links-and-

The first of the *new* Infants' Komet Links Machines in 2¼" and 2¾" diameters, in fine and coarser gauges for knitting infants' half-sox and anklets in sizes from 4 to 6½, will soon be ready for shipment.

For many years infants' hosiery has been produced by machines of limited style and pattern scope. These new machines, however, produce an almost endless variety of Links-and-Links patterns and rib combinations, in both the tops and boots of half-sox and anklets.

With such a varied line of quality infants' hose, alert mills will have the competitive advantage that will win them a larger and more profitable share of this vast market.

Moreover, manufacturers of infants' hosiery are now freed from the difficulty of two machine operation and the staggering expense of hand transfer knitting. **This new machine is completely automatic.** Because of its double feed features, it has an extremely high production rate which means greatly lowered knitting costs.

Call your Scott & Williams representative for samples of hosiery and complete details on the S&W Infants' Komet Links-and-Links Machine.

S&W

**SCOTT & WILLIAMS, INC.**

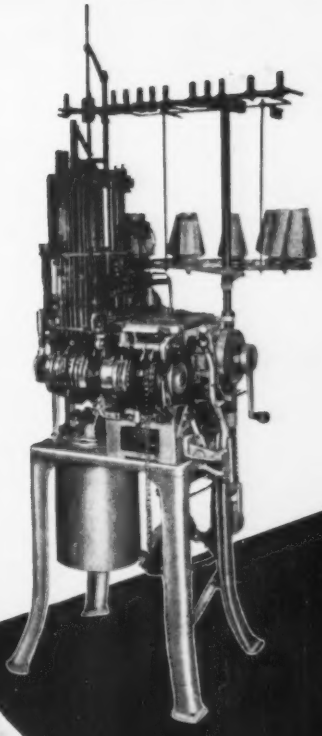
*Established 1865*

MAIN OFFICE AND PLANTS: LACONIA, NEW HAMPSHIRE

*Sales Office:* Empire State Building, New York 1, N. Y.

*Divisional Offices:* High Point, N. C., Reading, Pa., Chattanooga, Tenn.

# Links Machine



# TUFFER Men Give You Practical Help

Practical help by TUFFER men has long been a policy of Howard Bros. Constantly we receive letters from customers expressing appreciation of the "over and above" service given by TUFFER men. They are qualified by specialized training and experience to give workable suggestions and recommendations.

**FROM RECENT LETTERS:** ⟶

*Talk over your carding problems with a Howard Bros. representative. Write today to our nearest plant or office.*

"... right off the bat you gave me an idea I had never heard of, one I can now appreciate from a practical angle. You know how to make good the claim in your advertising that your representatives are 'practical' men in time of need."

"Your representative told us things we had never heard of, much less thought about, which gave us immediate improvement in our production and quality."

"I'm not buying anything but Howard Bros. Tuffer Card Clothing, and that goes as long as they give the same quality and service."

**HOWARD BROS. MFG. CO.**
WORCESTER 8, MASSACHUSETTS

**Southern Plants:** Atlanta, Ga. and Gastonia, N. C. **Branches:** Philadelphia, Pa. and Blanco, Texas
Direct Representation in Canada A-3

TUFFER CARD CLOTHING — *IMPROVES PRODUCTION ALL ALONG THE LINE*

# Sure to suit your pressure needs

*Gardner-Denver Class "RX" Single-Stage Horizontal Compressor—available in capacities from 89 to 1292 cubic feet displacement per minute.*

Whether you need air at the usual shop pressures . . . or considerably below . . . there's a Gardner-Denver "RX" Compressor just right for your job. Available in a wide range of sizes, these compressors are famous for a variety of heavy-duty, full-load services. Volumetric efficiencies rate high — power costs unusually low. At the right are other reasons why you find the "RX" in so many different industries.

For complete information, write Gardner-Denver Company, Quincy, Illinois.

★ Complete water jacketing of cylinder, heads, and air passages assures low discharge temperature.

★ Suction valve unloaders on all inlet valves result in lowest power consumption during unloaded period.

★ Gardner-Denver Duo-Plate "Cushioned" Valves—simple, durable, quiet.

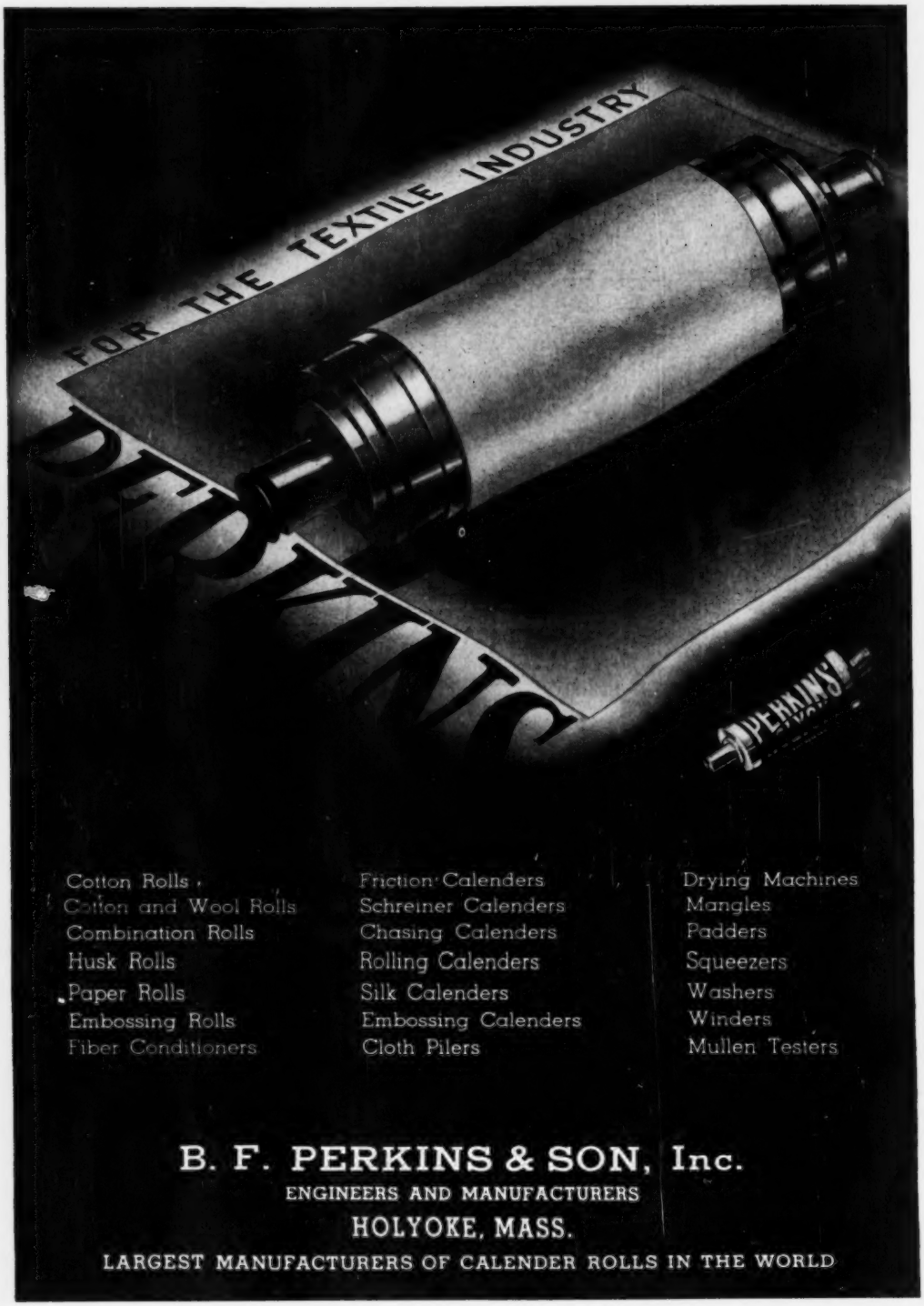
★ Large, unrestricted port areas help reduce heat of compression; insure effective lubrication with minimum oil consumption.

★ Streamlined, enclosed main frame completely oil and dust tight—yet all working parts are easily accessible.

★ Timken adjustable double-row tapered roller bearings support crankshaft.

Atlanta, Ga. • Birmingham, Ala. • Boston, Mass.
Knoxville, Tenn. • Washington, D. C. • New York, N. Y.
Philadelphia, Pa. • Pittsburgh, Pa. • New Orleans, La.

GARDNER-DENVER SINCE 1859




Cotton Rolls
Cotton and Wool Rolls
Combination Rolls
Husk Rolls
Paper Rolls
Embossing Rolls
Fiber Conditioners

Friction Calenders
Schreiner Calenders
Chasing Calenders
Rolling Calenders
Silk Calenders
Embossing Calenders
Cloth Pilers

Drying Machines
Mangles
Padders
Squeezers
Washers
Winders
Mullen Testers

**B. F. PERKINS & SON, Inc.**

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

COLOR
Sells Fabrics
Franklin Process
LARGEST PACKAGE DYERS IN THE WORLD
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA
New York Representative: 40 Worth Street

# UXBRIDGE

## Chooses "The Fleet Line" CARBONIZING RANGE

**THE FLEET LINE**

Cloth Washers
Fulling Mills
Piece Dye Kettles
Dye Becks
Rope Soapers
Carbonizing Ranges
Squeeze Roll Extractors
Bleaching Equipment
Soaping Machines
Soap Distributing Systems
Continuous Dry Cleaners
Tenter Dryers
Stock Dye Kettles
Top Dyeing Machines
Crushers
Yarn Steamers
Rolls, Reels, Parts

*Let us make recommendations for YOUR wet finishing modernization requirements.*

Uxbridge Worsted Corp., Uxbridge, Mass. is only one of the many textile companies which have included the Fleet Line Carbonizing Range in their modernization programs. This unit consists of wet out tank, heavy 18" squeeze rolls, acid soaking tank, another set of heavy 18" squeeze rolls, 12-pass cloth tenter dryer (127 yds. capacity) and infra-red lamp baker. Noteworthy features include the following:—

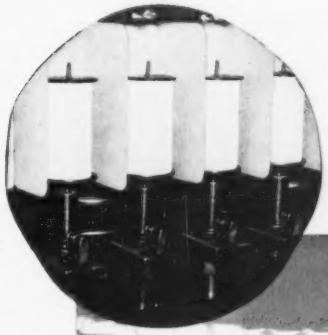
1. **Speed of range is synchronized with speed of dryer, which is set manually. Dryer operates at 10 to 40 y.p.m.**
2. **Acid tank has one-piece vulcanized rubber lining, giving long life and eliminating leakage and repairs.**
3. **Extra large tank, gives longer soaking time for better penetration.**
4. **Two sets of heavy squeeze rolls, and three sets of smaller squeeze rolls assure thorough acid penetration and good extraction.**
5. **Air agitation keeps bath circulating.**

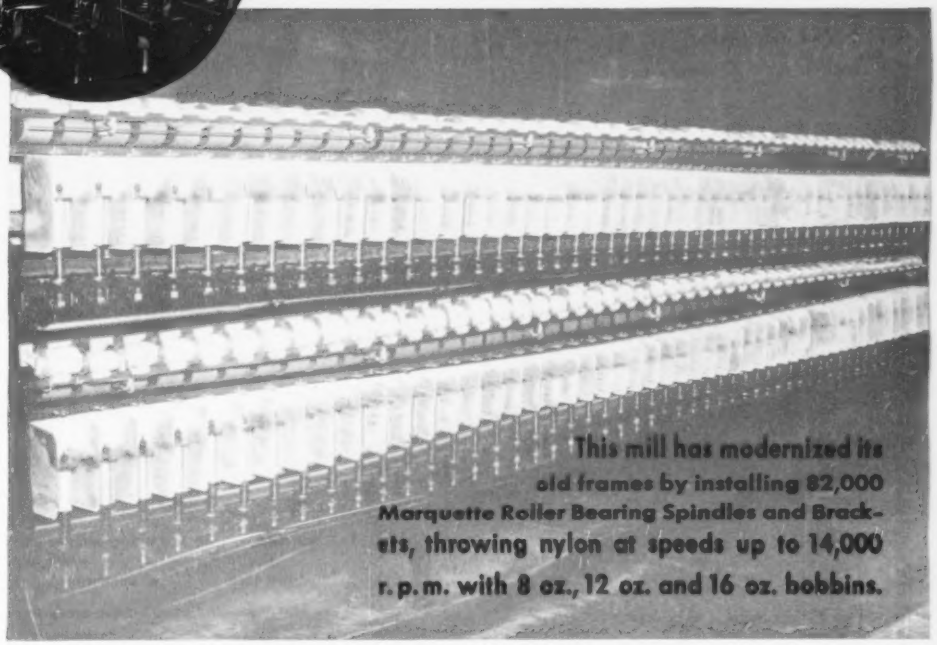
**RIGGS AND LOMBARD**
Foot of Suffolk St., Lowell, Mass.
INCORPORATED

AGENTS: Paul A. Merriam, 1491 Broad St., Providence, R. I.; Harold C. Osler, 6312 Sherwood Road, Philadelphia, Pa.; Charles H. Dunker, 1236 South Maple Ave., Los Angeles 15, California; Albert R. Breen, 80 Ea. Jackson Blvd., Chicago 4, Illinois.

# Marquette ROLLER BEARING SPINDLES *with* FULL-FLOATING FOOTSTEP BEARING

*For Cotton, Rayon, Nylon, Wool, Worsted*





**This mill has modernized its old frames by installing 82,000 Marquette Roller Bearing Spindles and Brackets, throwing nylon at speeds up to 14,000 r.p.m. with 8 oz., 12 oz. and 16 oz. bobbins.**

By modernizing your old frames with Marquette Roller Bearing Spindles, you too can increase production by operating at higher speeds. Marquette Roller Bearing Spindles can be obtained by all frame builders. Ask our nearest sales office for illustrated catalog, or write direct.

PROTECTED BY U. S. AND FOREIGN PATENTS, AND PATENTS PENDING

*The* Marquette METAL PRODUCTS CO.

CLEVELAND 10, OHIO

SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

*Also Manufacturers of:* HYDRAULIC GOVERNORS • FUEL OIL PUMPS
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSES
FUEL OIL INJECTORS • PRECISION PARTS AND ASSEMBLIES

BYRD MILLER, WOODSIDE BLDG., GREENVILLE, S. C. • C. H. WHITE, 1229 PAMLICO DRIVE, GREENSBORO, N. C.
WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA. • JOHN J. HALLISSY, 59 LIVINGSTON AVE., LOWELL, MASS.
IAN M. HALDANE & COMPANY, P. O. BOX 54, LONDON, ONT.

*Did You Know?*

# Jacobs Makes ALL The Loom Needs

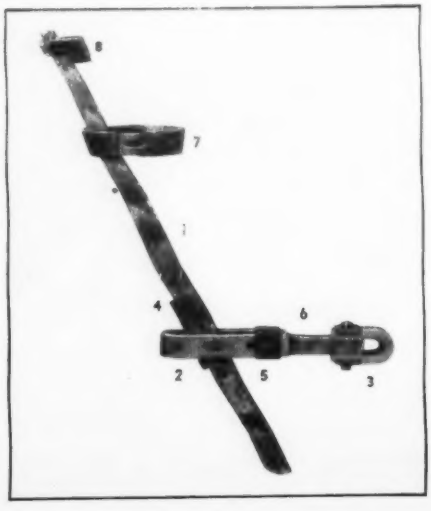
*for*

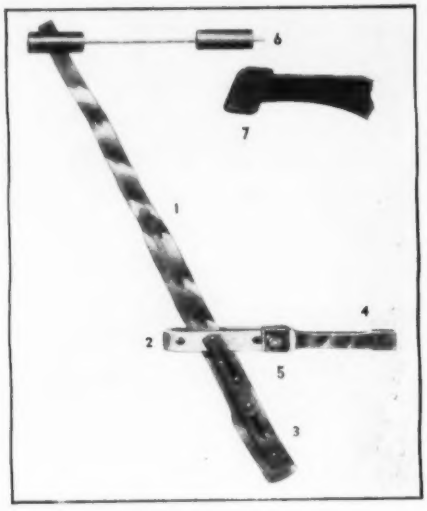
## Crompton & Knowles and Draper Looms

**THESE Weaving Loom Necessities illustrate only a few of many standard items in common use—available in many styles, materials, shapes, and constructions — developed to any loom or individual mill needs and preferences.**

**Crompton & Knowles**

1. Picker Stick
2. Lug Strap
3. Power Adjustor
4. Sweepstick
5. Lug Washer
6. Tubular Spindle Bumper
7. W-Type Bunter




**Draper**

1. Picker Stick
2. Lug Strap, long
3. Lug Strap, short
4. Holdup Strap
5. Lug Washer
6. Connector
7. Check Strap
8. Loop Picker

JACOBS

E. H. JACOBS NORTHERN DIVISION

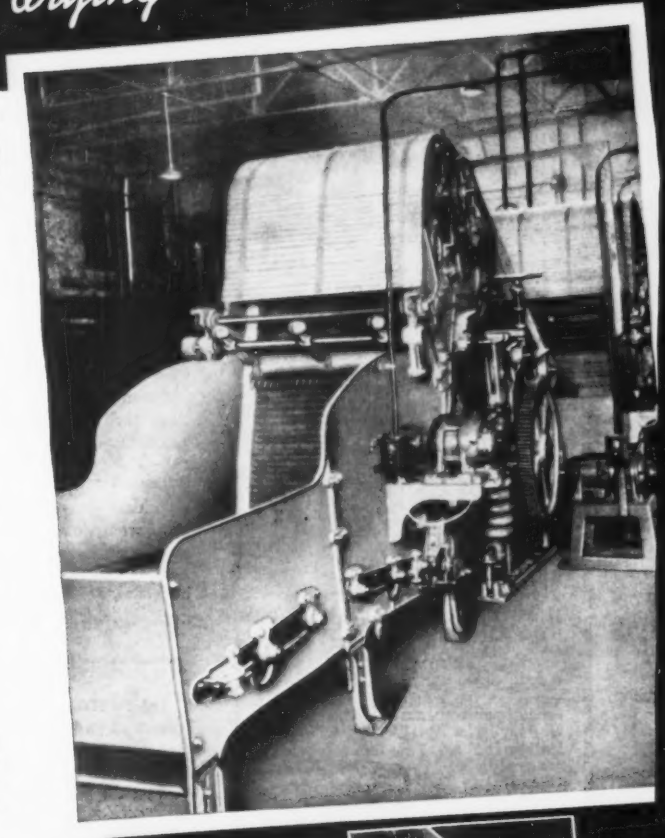
The Bullard Clark Company

DANIELSON, CONNECTICUT

# SARGENT'S

## CONTINUOUS – AUTOMATIC EXTRACTING MACHINE

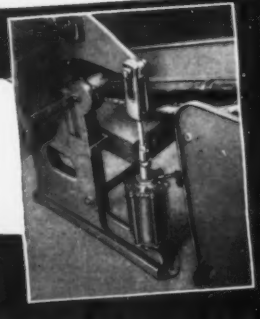
*Reduces drying costs to a minimum*



### TODAY'S MODERN EFFICIENT METHOD

*The* SARGENT "CONTINUOUS" EXTRACTING SYSTEM *is saving thousands of dollars for many woolen, worsted and cotton mills. It employs an Automatic Feeder, the Extracting or Squeeze Roll Machine, and a Stock Dryer. This method of removing surplus dye, bleach, or scouring liquor from wool, staple rayon fibres, shoddy, mixed fibres, cotton and cotton linters, before drying, offers many distinct advantages,*

- One-man operation, with capacity up to 2,500 pounds per hour.
- Machines made in five widths for varying plant requirements.
- Even and continuous flow of material into and through the dryer.
- Uniform drying results—Savings in power—savings from continuous action—savings in labor, with ease of operation.
- Greater speed of operation, with least danger hazard.
- Stock is better conditioned, containing fewer "bunches." Eliminates most of the usual matted condition of stock coming from a hydro-extractor.
- Pneumatic load lift, with pressure control. Approximately 10 tons pressure between rolls.
- Direct motor drive. Spherical roller bearings on the squeeze rolls.
- Rugged construction. Trouble-free operation.



*Detail of the Pneumatic Load Lift*

## C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U. S. A.

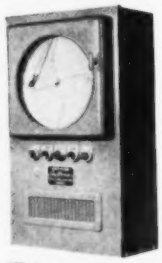
# BARBER-COLMAN

COMPLETE, AUTOMATIC

## *Slasher Room Controls*

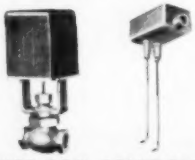
**INCREASE SLASHER PRODUCTION**

**IMPROVE WEAVE ROOM EFFICIENCY**



### *Electronic*
**MOISTURE CONTENT CONTROLLER**

An *all-electronic* instrument that controls slasher speed constantly to compensate for all variables and to produce warps of uniform and optimum moisture content.



**SIZE BOX CONTROLS**

Two functions are performed — maintenance of uniform size temperature and maintenance of proper size level in the box.

**CYLINDER TEMPERATURE CONTROLS**

Essentially, these are motor-operated valves on the steam supply line governed by thermostats in each cylinder, with any desired indicating or recording accessories.

**TEMCHRON**

**SIZE COOKING CONTROL**

Assures uniformity of size from batch to batch by automatic control of warm-up time, cooking time and temperature, and holding temperature. Fully adjustable.

When considering *self-liquidating* improvements in a textile mill, no mill executive should overlook the slasher room. Modern automatic control equipment installed on existing machines costs relatively little and can pay for itself in a short time. Barber-Colman Complete Slasher Room Controls include: (1) TEMCHRON Size Cooking Controller that assures uniformity of batches through automatic control of warm-up time, cooking time and temperature, and holding temperature; (2) Automatic temperature control for size storage kettles; (3) Temperature controls and level controls for the size box, to provide constantly uniform condition of the size being used; and (4) Automatic *Electronic* MOISTURE CONTENT CONTROLLER that constantly regulates the speed of the slasher to compensate for all variables, and assures the delivery of warps with uniform and optimum moisture content. The effect of these controls is a considerable increase in slasher production and a noticeable improvement in weave room efficiency through improved warps as shown by the typical results reported below. Consult your Barber-Colman representative concerning possible improvements and savings in *your* mill — his advice and recommendations are available without obligation.

**TYPICAL RESULTS**
**OF INSTALLING BARBER-COLMAN SLASHER CONTROLS**

A South Carolina mill, slashing 19s cotton warp for ticking, secured a slasher production increase of over 30%. Weave room efficiency was increased 2.0% and there was an improvement in quality of goods.

Another South Carolina mill, weaving print goods from 30s yarn, increased slasher production by 20% even though steam pressure on the cylinders was reduced from 10-12 psi to 1-3 psi.

A North Carolina mill, weaving sheeting from 20s yarn, found slasher production was increased by 25% and weave room efficiency by 1.5%.

Another North Carolina mill, weaving fancy striped shirtings from 40s yarn, did not try to increase slasher production because of an established yarn inspection and repair operation, but did obtain sufficient benefits from quality improvement, increased weave room efficiency, and better tying-in to justify the investment.

Six New England and Canadian mills report increases in slasher speed ranging from 15% to 50%. Another New England mill actually increased speed by 100%, but the yarn was previously very much overdried.

*Write for Literature*

**BARBER-COLMAN COMPANY**
ROCKFORD, ILLINOIS

BOSTON, MASS. • GREENVILLE, S. C. • GREENSBORO, N. C.

# For Ideal Conditions in your PLANT

Listen to the wheels hum . . . look at the smiling faces . . . see the improved quality of your product. Know what? You've had *your* plant re-conditioned from top to bottom with SHERWIN-WILLIAMS PAINT!

You used our versatile Save-Lite Whites for better light . . . this improved *see-ability* . . . made it easier for your people to turn out better jobs . . . kept them from complaining, wasting precious time! And *in addition* to this Paint for Light, you called in Sherwin-Williams Color Experts to advise on Paint for Color!

And do you know that with this ideal combination you actually have been saving money? We have a *great many actual case histories* that *prove* the value of the full Sherwin-Williams treatment! Write us today! The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio. (Export Division, Newark, N. J.)

COVER THE EARTH

**AT THE START, CONSIDER THE FINISH**

**SHERWIN-WILLIAMS INDUSTRIAL FINISHES**

Products of SHERWIN-WILLIAMS Industrial Research · Available at 385 SHERWIN-WILLIAMS Branches

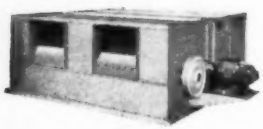
Westinghouse Air Conditioning System with Kathabar Humidity Control installed by Natkin & Co.

The Shell Oil Company was about to invest $1,300,000 for a new laboratory in Houston, Texas, for oil research. Plans called for extremely critical atmospheric condition control. Temperatures and humidity had to be held constant within close limits. It was essential that the air be kept as free of dusts and pollens as modern science would permit. Laboratory fumes had to be eliminated quickly. Westinghouse Air Conditioning with PRECIPITRON*, the electronic air cleaner, supplied the answer to the air cooling and air cleaning problems—not with special equipment, *but with standard, matched, Westinghouse components.*

Expensive "special" jobs can often become routine jobs when you specify Westinghouse, because Westinghouse makes more products to put air to work in more different ways, than any other manufacturer. This means undivided equipment responsibility, coordinated system operation, flexibility and economy—important benefits that can hardly be overlooked when you are thinking about air conditioning, air handling, or air cleaning. Call your nearest Westinghouse office, Air Conditioning Distributor, or write to Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Massachusetts.

# Westinghouse

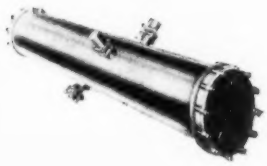
## Sturtevant Division



AIR HANDLING UNITS

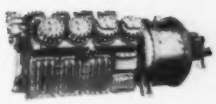
UNIT HEATERS

CENTRIFUGAL FANS



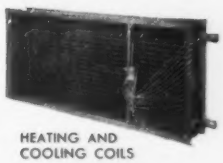
REFRIGERATION CONDENSERS

# HOW SHELL BOUGHT PRECISION AIR CONDITIONING FOR LABORATORY ATMOSPHERE CONTROL



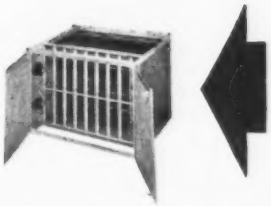
REFRIGERATION COMPRESSORS

EVAPORATIVE CONDENSERS



HEATING AND COOLING COILS

UNIT AIR CONDITIONERS ROOM AIR CONDITIONER

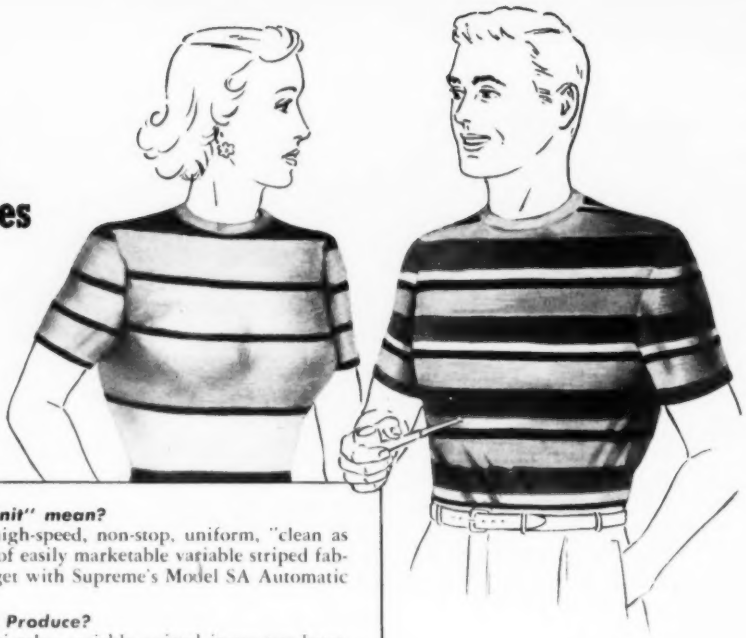


PRECIPITRON*
(ELECTRONIC AIR CLEANER)

**Everything that puts air to work for Every application**

J-80132 *Reg. U. S. Pat. Off.

# You can "profit-knit" variable stripes with . . . Supreme's Model SA



***What does "Profit-Knit" mean?***
"Profit-Knit" means high-speed, non-stop, uniform, "clean as a whistle" production of easily marketable variable striped fabrics. That's what you get with Supreme's Model SA Automatic Variable Striper.

***How fast will the SA Produce?***
Knits 25 yards of multi-color variable striped jersey per hour. 24" diameter machine operates at 24 R.P.M. with all 16 feeds producing *all* the time.

***What makes this high production possible?***
1. Yarn stand is stationary; cylinder and take-up revolve.
2. Unique, concealed method of camming permits color change without *any* slowdown.

***Is production affected by stripe selection?***
You can stripe in one course or a million courses–yet all feeds keep knitting. Up to 4 colors on each feed.

***What does "non-stop" mean?***
The stationary yarn stand principle permits loading double-tied cones. 24 hour operation without cone replacement.

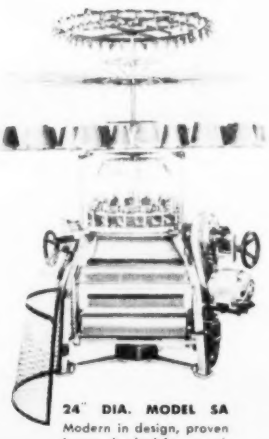
***What is "clean as a whistle" production?***
Fabric made on the Model SA has no braid of waste along the seam. Easier finishing, too.

***Why is SA fabric "easily marketable"?***
Uniform, even stitches maintained throughout. New type spreader lines up stripes so that they go on the roll-up straight. Simplifies finishing and matching.

***Is the Model SA easy to operate?***
Rotary drum method makes selection of width and variation of stripes quick and easy. Camming method eliminates "rifle shot" noises when color changes; gives you a quiet mill.

***What about pattern wheel work?***
The SA is built to receive the necessary parts for a quick changeover to a Model SA-ROF for 3-Position "Floatless" plaids, checks and designs.

***How can further information be obtained?***
Simply write, wire or 'phone for complete, free information.



**24" DIA. MODEL SA**
Modern in design, proven in use, backed by experience.

**SUPREME**
**KNITTING MACHINE CO., INC.**
105 JOHNSON AVE., BROOKLYN 6, NEW YORK, N. Y.

SK-117

*Visit us at Booths 219, 220, 221, 234, 235, 236, Knitting Arts Exhibition, Atlantic City, N. J., U. S. A., April 25th to 29th.*

vat fastness
ease of application

# algosols

for cotton · rayon
mixed fibers
wool · printing

For detailed information regarding Algosols communicate with our home office or any of our branches.

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435 HUDSON STREET, NEW YORK 14, NEW YORK
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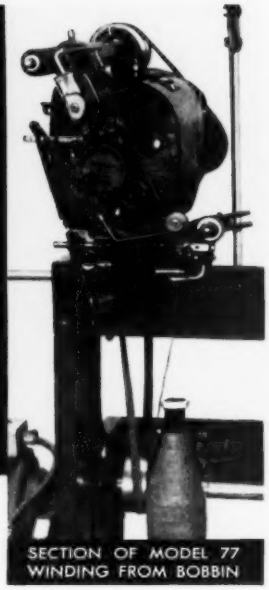
SECTION OF MODEL 40
WINDING FROM SKEIN

# Carpet Mill will save about $17,000.00 per year with Foster heavy duty winders



SECTION OF MODEL 77
WINDING FROM BOBBIN

One leading carpet mill, which has recently installed Foster Model 40 and Model 77 Winders, estimates that it will save approximately $17,000.00 per year by this move. Here's why: —

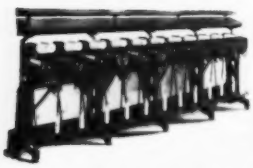
1. **These Winders will give about twice as much production per hour as the old spoolers.**
2. **They also put twice as much yarn on a package, although the package is the same diameter as a spool.**
3. **They will cut doffing time at the winder in half.**
4. **They will cut yarn carrier costs to a mere fraction of what they were before, using inexpensive paper tubes in place of expensive and hard to get wooden spools. The paper tube packages fit in the same creel which is used for spools.**
5. **The greater supply of yarn on the Foster package means long runs and much less creel doffing at the loom.**
6. **The number of packages to handle is reduced by about 50%.**

SALE YARN MILLS — serving the carpet and other industries profit by installing Foster Heavy Duty Winders because their product is thus made more salable, offering important savings as described above.

Tell us your coarse yarn winding problem and let us make recommendations. No obligations.

## *Facts about* MODELS 40 and 77

1. Model 40 handles 30/2 to 8/40 yarns; Model 77 from 8/3 to 8/100.
2. Model 40 package — up to 6½" traverse, Model 77 package — up to 8" traverse.
3. Both machines can be equipped to draw overend or by unrolling from bobbins or from skeins on runner reels.
4. Runner reels for skeins are light in weight, but give long life and are equipped with ball bearings.
5. Ball bearing spindles and drive shaft are standard on Model 77 and optional on Model 40.
6. Spindles driven by individual quarter turn belts, insuring constant spindle speed.
7. Arbors for various types of cones and tubes furnished for both machines.
8. Model 40 can be equipped to wind multiple end braider tubes.



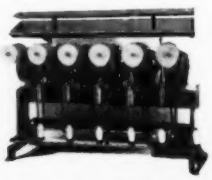
FOSTER MODEL 40

## FOSTER MACHINE CO.

WESTFIELD, MASS.

Southern Office, Johnston Bldg., Charlotte, N. C.

*Canadian Representative,* Ross Whitehead and Company Limited, University Tower Bldg., 660 Ste. Catherine St. West, Montreal, Que.; *European Representative,* Muschamp Taylor Limited, Manchester, England.



FOSTER MODEL 77

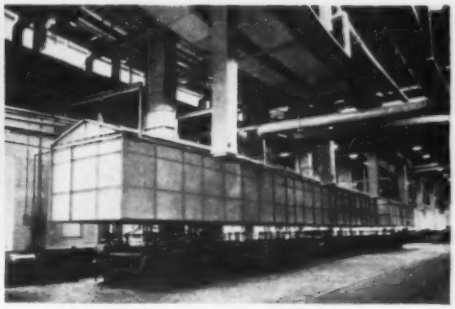
# ROSS *Air Systems*

WERE SPECIFIED FOR THE NEW

## SPRINGS COTTON MILLS'

## GRACE BLEACHERY

ROSS Transite Hood over Dye Jigs. Note ducts and outlets for comfort cooling in operating aisle.



View of Open Width Bleach Range showing ROSS Transite Hoods over Dry Cans and Williams Units. Note duct distributing heated air over ceiling.

## *Most advanced methods of air handling for the industry's most modern bleachery*

Of the many notable features of Springs Cotton Mills' New Finishing Plant, none has aroused more interest than the scientific use of air for processing operations. The thoroughly modern Air Systems designed by ROSS engineers effectively confine and remove vapors from processing equipment, such as dye jigs, dry cans, etc., prevent condensation on ceilings and walls, eliminate fog, remove evaporation and provide comfort cooling for operators. In all, these ROSS Systems handle 700,000 cfm. of air. Springs Cotton Mills provides another example of how the industry's most modern and best equipped plants depend upon ROSS Systems for all air handling problems.

**ROSS SYSTEMS FOR FINISHING PLANTS**

**HEATING • VENTILATING • COOLING • DRYING**

ROSS SYSTEMS

## J. O. ROSS ENGINEERING CORPORATION

*MANUFACTURERS OF AIR PROCESSING SYSTEMS*

**350 MADISON AVENUE NEW YORK 17, N. Y.**

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ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

# Sweating

## is "evaporative cooling"

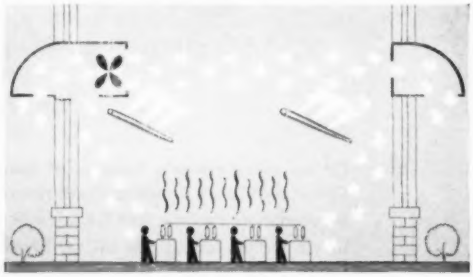
## ...the hard way!

**AMCO EVAPORATIVE COOLING IS THE EASY, INEXPENSIVE WAY** to get rid of excessive heat. Because this way doesn't take it out of the worker in sweat and dragging fatigue. It gives precise control of both humidity and temperature which makes for a better product as well as a contented worker.

You already have a part of the system . . . humidification. The rest can be easily added, room by room, as you need it. No cumbersome air ducts. Just an air inlet and circulating fan to draw in the correct amount of fresh air and an outlet for automatic exhaustion of excess heat and spent air through controlled vents. Adjustable for frictional heat load of each area. Maintenance kept at a minimum.

Just as simple and easy as it sounds . . . and fully automatic. Ask an AMCO engineer to show you how inexpensively you can make your mill first choice of the most efficient workers, how you can boost both production and quality by the addition of an AMCO Evaporative Cooling System to your present humidification.

**AMCO Evaporative Cooling Systems work this way...** *A controlled amount of fresh air is drawn into the mill and combined with some re-circulated air. Spray from atomizers introduces extra moisture, raising relative humidity to desired point. Evaporation of moisture absorbs frictional heat, thus reducing excessive room temperature. Spent air is exhausted automatically through controlled vents.*



**give you all these advantages...** *Increase worker comfort ▾ ▾ ▾ Reduce excessive temperature and hold relative humidity at point best suited to fibre and process ▾ ▾ ▾ Permit faster machine speeds in high friction (heat) areas ▾ ▾ ▾ Assure evener yarn counts and increase breaking strength ▾ ▾ ▾ Gradually increase regain for good roving and consequent better spinning ▾ ▾ ▾ Drafting of fibres smoother and more compact ▾ ▾ ▾ Waste and fly greatly reduced ▾ ▾ ▾ AMCO self-cleaning atomizers assure constant, full capacity delivery . . . no drip . . . no feathering down . . . minimum maintenance . . . long life.*

# AMCO

**HUMIDIFICATION AND COOLING**

AMERICAN MOISTENING CO., AFFILIATED WITH GRINNELL COMPANY, INC., PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE

*The Reason for Florence Tailored Color:*

TO MAKE YOUR END PRODUCT BETTER!

Your intent, naturally, is to make the best product possible for your customers so that they will buy and you will profit. Make a better product by using *Florence Tailored Color*. Color is our business and color we know. *Tailored Color* comes from our processing of cotton, wool, synthetic or blended yarns by special laboratory and technical methods to give you the exact color you specify, the exact fastness you specify, and the quality you require. The reason for *Tailored Color* and the reason for its acceptance, is because it *does* enable you to make a better end product. We *Tailor Color* yarn either supplied by you or obtained by us.

Use *Florence Tailored Color* beginning today.

**FLORENCE THREAD CO., INC.**

ESTABLISHED 1894

Fairview Street, Riverside, New Jersey—Phone Riverside 4-0211

New York Sales Office: 55 W. 42nd Street, New York 18, N. Y.

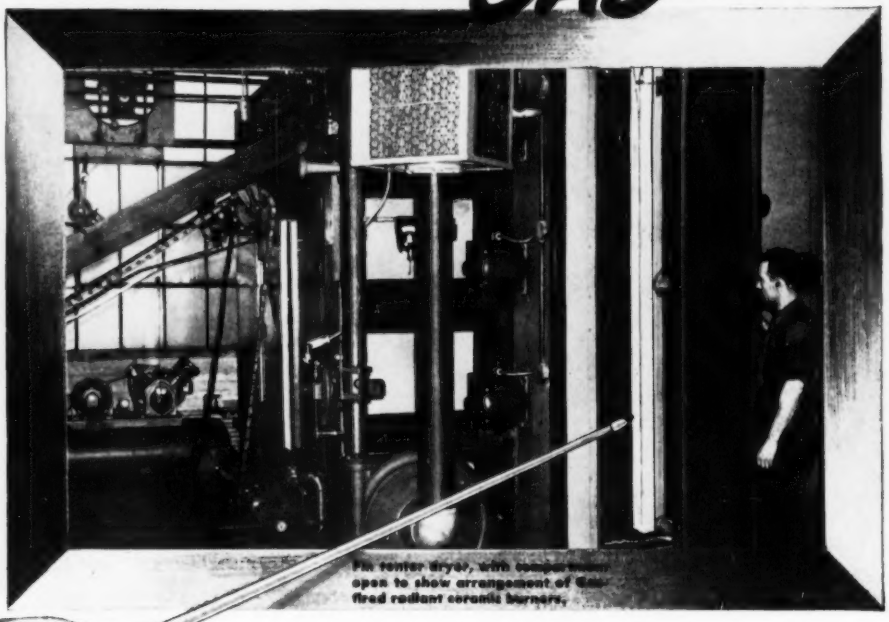
*Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns*

Processors and Distributors of "USTEX"* Industrial Sewing Threads

*Trade Mark Registered U. S. Pat. Off. By United States Rubber Company

# GUILD · NORTHLAND MILLS

## *Increases Capacity and Utility of Pin Tenter Dryer with* Radiant GAS Burners



Pin tenter dryer, with [illegible] open to show arrangement of Gas-fired radiant ceramic burners.

MODERNIZATION of existing equipment is a logical step to meet the demand for increased production. And, in modernizing heat processing equipment, the advantages of GAS and modern Gas Equipment have been proved in thousands of installations.

When confronted with the need for increased drying speeds in a pin tenter dryer the engineers at Guild-Northland Mills, Laconia, New Hampshire, installed radiant Gas-fired ceramic burners in the drying chamber. This simple installation provides automatic control of temperatures up to 450° with complete safety.

In this installation the flexibility of GAS is emphasized by the comments of Guild-Northland Superintendent G. E. BonDurant—**"The Gas-fired equipment not only increased the drying capacity of our pin tenter but also gives us the temperatures and drying speeds necessary for curing special resin finishes."**

Wherever heat is required in textile processing —for slashing, drying, polymerizing, and other operations—there's a task for GAS and modern Gas Equipment. You'll find it worthwhile to investigate the advantages of GAS for textile productioneering.

**Photos Courtesy of RED-RAY Manufacturing Company, Inc., New York City, Manufacturers of Gas-fired Radiant Ceramic Burners.**

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

**AMERICAN GAS ASSOCIATION**

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

NEW! — Whitney Type A Flexible Coupling now features plastic covers for reduced weight and efficient high speed operation.

# WHITNEY ROLLER CHAIN
## *Flexible Couplings*

***For***
***Positive, Yet Flexible***
***Direct Drives***

Here's a Flexible Coupling that supplies the equipment manufacturer and machine user with a *practical* and efficient unit for connecting power equipment to direct drives. Note the simple, all-steel construction . . . no short-lived materials to wear out or replace! Precision Roller Chain, assembled around accurately cut, hardened steel sprockets provide positive operation with inherent flexibility . . . assures long life. Additional Whitney features include: ease of installation, compactness, allows for motor end play, disconnects without removing shafts and bearings, allows for slight shaft misalignment. These are good reasons why you should specify and use Whitney Flexible Couplings for lasting, all-round performance and machine protection.

Whitney Roller Chain Flexible Couplings are adaptable to a wide range of transmission service, covering light, medium or heavy loads. You can use them to connect electric motors, gasoline engines, diesel engines, steam engines, etc., to any direct drive units, such as pumpers, compressors, blowers, beaters, speed reducers,—in short, to any of your production machinery where a positive but flexible direct drive is required.

Available from factory or distributor stock in popular sizes covering a wide range of application — from fractional to hundreds of horsepower. For complete information and engineering bulletin, write us today.

**OTHER WHITNEY CHAIN PRODUCTS**

- Roller Chain—single and multiple widths
- Silent Chain
- Conveyor Chain
- Cut Tooth Sprockets

**Whitney Chain & Mfg. Co.**
*Division of Whitney-Hanson Industries, Inc.*
**211 HAMILTON STREET, HARTFORD 2, CONN.**

UNION PACIFIC

# The Governor of Oregon *invites You*

STATE OF OREGON
EXECUTIVE DEPARTMENT
SALEM

DOUGLAS McKAY
GOVERNOR

To American Industry:

Oregon's industrial payroll has doubled since 1940 and her population has increased 49 per cent. New abundant supplies of America's lowest cost electric power serve Oregon industries and can be increased--up to 1000 per cent more--through the continued development of the Columbia River and its tributaries.

New markets for Oregon made products are expanding year by year. Industrial opportunities here are most attractive to investors requiring safety factors in long period operations.

The rare continuity-of-work record in Oregon's industry and the sane administration of local and state governmental units are not accidental. Labor, business, government and agriculture in Oregon cooperate to assure favorable conditions for new payroll producing industries. Oregon's door is wide open to sound industry and good management.

And Oregon is a great place in which to live!

Very truly yours,

Douglas McKay

Governor

Douglas McKay

*One of a series of advertisements based on industrial opportunities in the states served by Union Pacific Railroad.*

When selecting sites and seeking new markets in Oregon, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Utah, Washington, Wyoming . . . address Industrial Department, Union Pacific Railroad Omaha 2, Nebraska

**UNION PACIFIC RAILROAD**

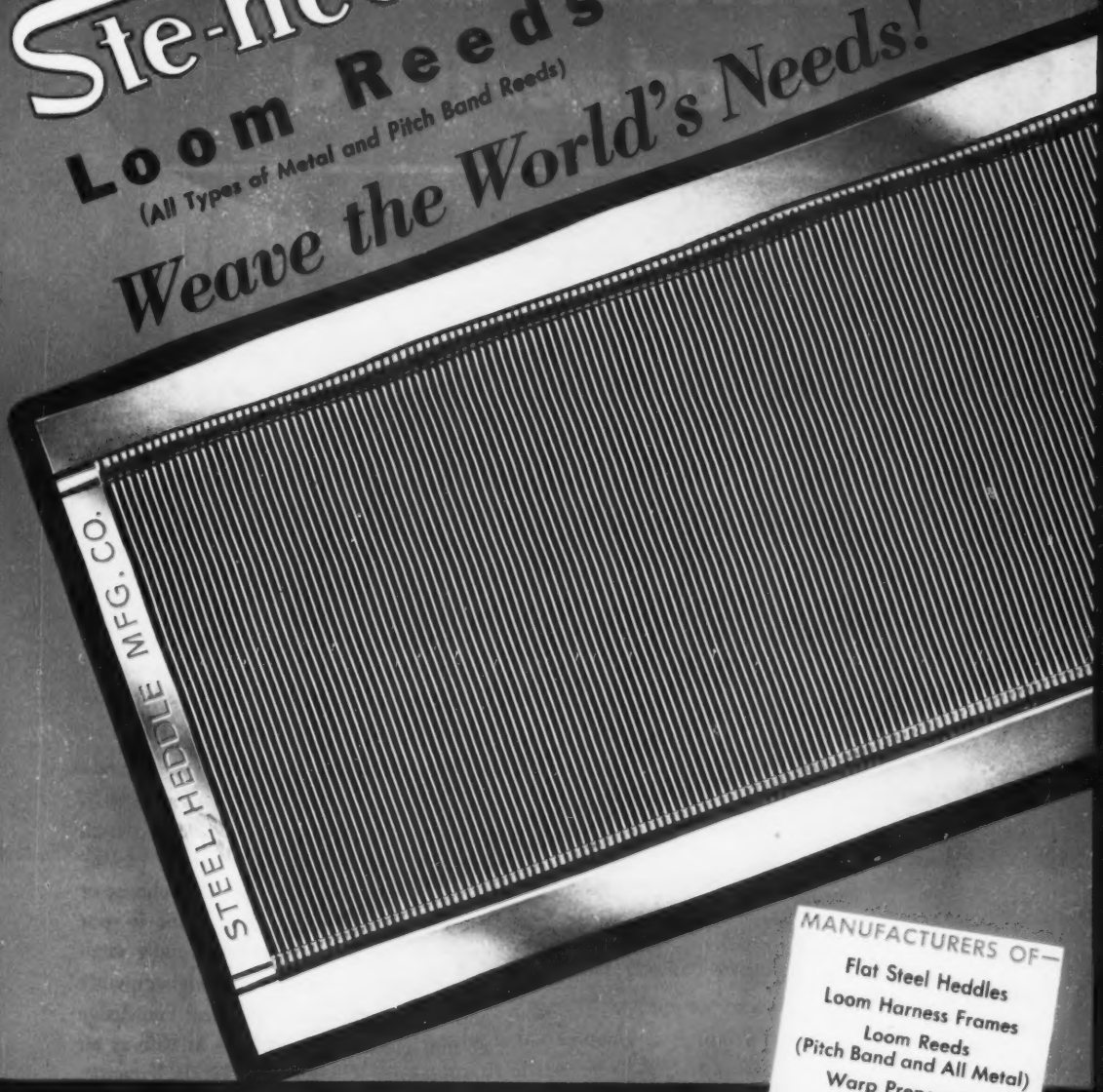
*Road of the Streamliners*

# Ste-hed-co

## Loom Reeds

(All Types of Metal and Pitch Band Reeds)

## Weave the World's Needs!



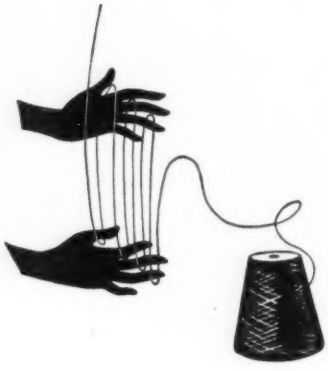

MANUFACTURERS OF—

Flat Steel Heddles
Loom Harness Frames
Loom Reeds
(Pitch Band and All Metal)
Warp Preparation Equipment
Loom Harness Accessories
Southern Shuttles
(Tempered Dogwood, Persimmon & Fibre Covered)

**STEEL HEDDLE MFG. CO.**
2100 W. Allegheny Ave., Philadelphia 32, Pa.
and
**SOUTHERN SHUTTLES DIVISION**
621 E. McBee Ave., Greenville, S.C., Shuttle Plant, Paris S.C.

Atlanta, Ga. · Greensboro, N.C. · Providence, R.I. · Montreal, Can.

# Better yarn-- as advertised

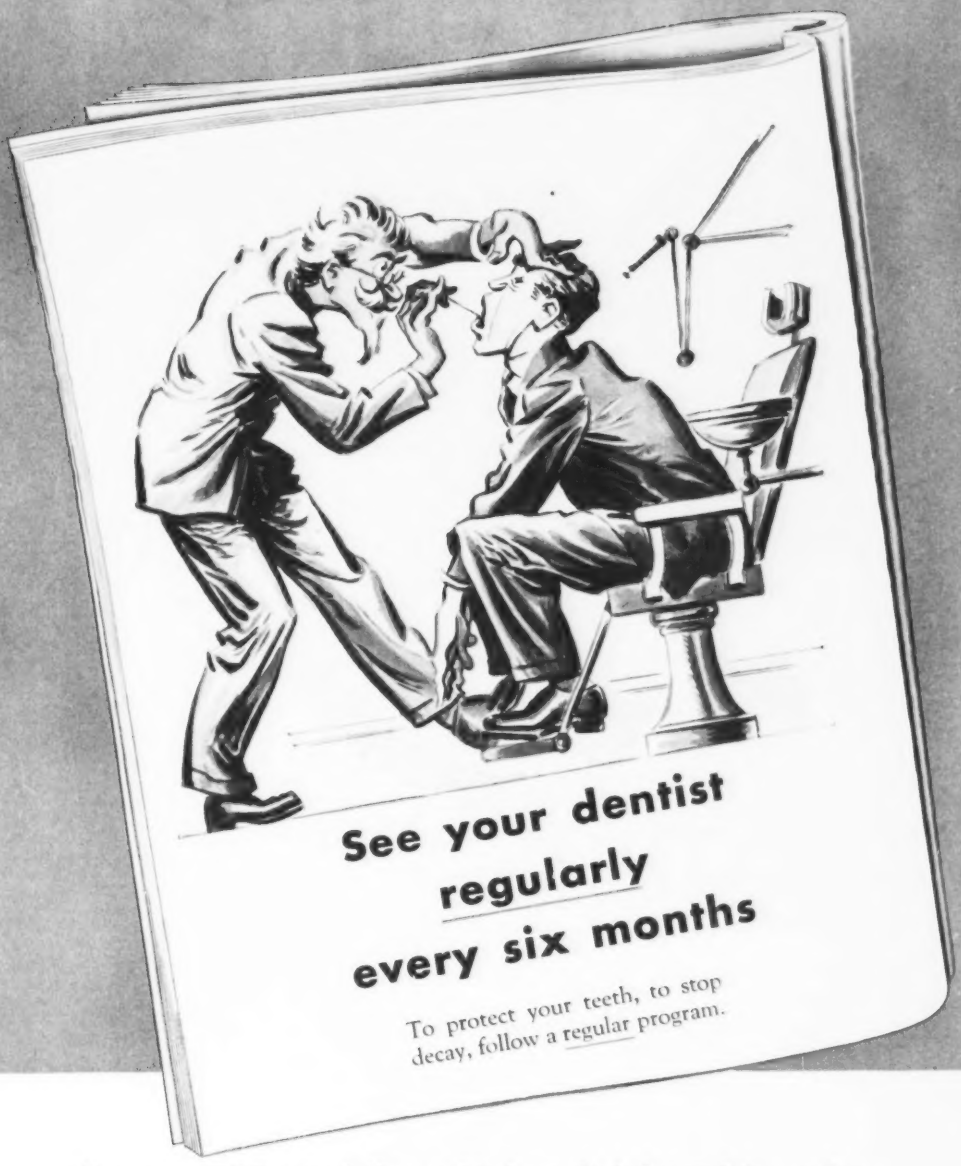


More and more advertisements in newspapers and magazines contain statements to this effect: "Our yarn is better because it's made in an air conditioned plant" . . . "These stockings wear longer – they're made in air conditioned space."

Chances are the "air conditioning" referred to is a Carrier installation, for Carrier does the job in hundreds of mills. Carrier pioneered the art of air conditioning in the textile field. And Carrier equipment reflects this know-how with the positive control of humidity and temperature.

There's no place for guesswork in air conditioning – for guesswork can be mighty costly. Carrier understands every phase of design and installation – from systems for picking to spinning to weaving, for the dyehouse or the entire mill. The Carrier name is your assurance of an installation soundly engineered for greater production, higher quality and lower cost – based on a real knowledge of mill production problems as well as air conditioning. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING




Have your Full-Fashioned Knitting Machines checked—regularly—to keep them at highest efficiency . . . Follow a regular program for reneedling and your needle bars are always in shape for better knitting . . . Follow a regular program for reconditioning and your plant is always at peak performance. We will be glad to discuss this matter of regularity as it applies to your mill operation.

TEXTILE MACHINE WORKS • READING, PA.

*The* "READING"
*Full-Fashioned Knitting Machine*

## *Hardness where it's important*

Textile Spring-Beard Needles are noted for outstanding wear hardness and amazing qualities of resistance. Only Textile's scientific tempering controls could bring about this proper amount of hardness required to withstand resistance from wear and stresses. Added to wear hardness is resiliency required during knitting operations.

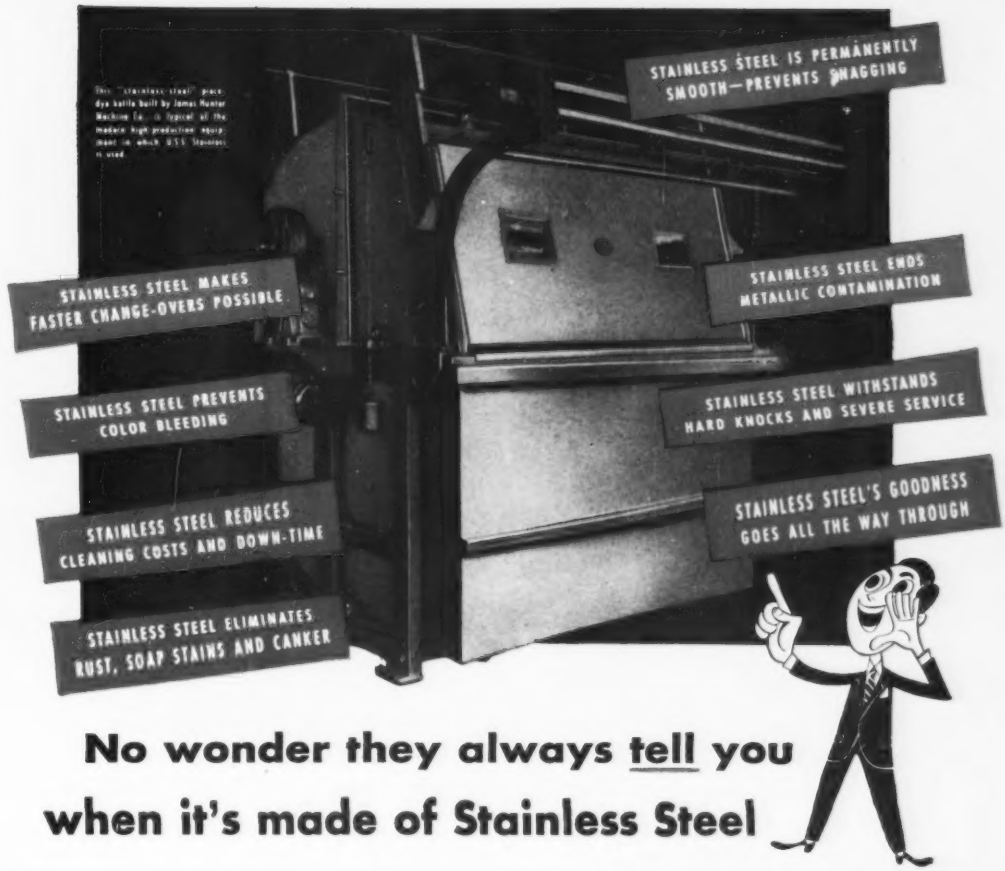
The top quality performance of Textile Spring-Beard Needles is the direct result of Textile's rigid quality controls, automatic and electronic, to make certain the needles are correct in every detail. You see the results in better knitting . . . better profits.

TEXTILE MACHINE WORKS, READING, PENNA.

# *Textile*

## SPRING-BEARD NEEDLES

*For Full Fashioned and Warp Knitting*


STAINLESS STEEL IS PERMANENTLY SMOOTH—PREVENTS SNAGGING
STAINLESS STEEL MAKES FASTER CHANGE-OVERS POSSIBLE
STAINLESS STEEL ENDS METALLIC CONTAMINATION
STAINLESS STEEL PREVENTS COLOR BLEEDING
STAINLESS STEEL WITHSTANDS HARD KNOCKS AND SEVERE SERVICE
STAINLESS STEEL REDUCES CLEANING COSTS AND DOWN-TIME
STAINLESS STEEL'S GOODNESS GOES ALL THE WAY THROUGH
STAINLESS STEEL ELIMINATES RUST, SOAP STAINS AND CANKER

# No wonder they always tell you when it's made of Stainless Steel

WHENEVER they use Stainless Steel in their equipment, makers of textile machinery never fail to *emphasize* that fact. They know there's no quicker way to let you know that it is made of the best material available . . . that it won't rust or corrode, will prevent off-color runs, will reduce maintenance and repairs, and will out-last and out-perform other construction.

The money-saving advantages of Stainless Steel have been well proved in the past few years of high pressure operation. That is why in today's new equipment, especially designed to speed up mill operation, Stainless Steel is being used in greater amounts and in more places than ever before.

Although it costs more—Stainless Steel has shown that it can do so much more, do it so much better and lasts so much longer that it is, in many cases, by far the cheapest material to use. Particularly is this true when U·S·S Stainless Steel is used.

In this perfected, service-tested steel, equipment builders and equipment users are sure of obtaining all the superior properties of Stainless Steel at their *best*. Consistently uniform, of fine finish, excellent in fabricating qualities, U·S·S Stainless responds readily and uniformly to the most advanced manufacturing techniques . . . insures the finest results in service. So if you want top performance from your equipment just add "U·S·S Stainless preferred" on your next equipment order. More than likely your equipment builder already uses it, but it pays to be sure.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND, CHICAGO & NEW YORK
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS UNITED STATES STEEL

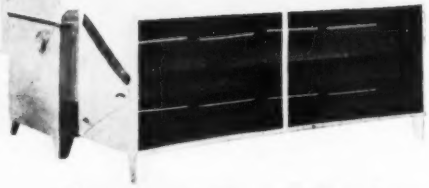
## U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-732

UNITED STATES STEEL

# A Better Product and More of It with Buffalo AIR CONTROL



## Comfort Conditioning For Worker Efficiency

What is worker productivity worth to you? Many textile and other firms have discovered the big difference "Buffalo" air conditioning can make! And "Buffalo" costs are not high when you figure the years of trouble-free service they give. The model "F" FPC Cabinet above can filter-clean your air, cool it, cool and dehumidify or heat and humidify in any desired combination. Available in vertical (as above) or horizontal models to suit the installation.

*Write for Bulletin 3703 on the complete Model "F" line of Comfort Conditioning cabinets!*

## Air Washing For Quality Control

Keeping dust down and humidity right — in short, keeping air conditions right — is the quality control job "Buffalo" Air Washers do in textile mills! These simply-constructed units draw your air through a spray chamber. Here, all solid matter in the air is made thoroughly wet and heavy then "scrubbed out" on surfaces of specially-designed eliminator plates. Available as simple air washers, or as the PCW Cabinet shown above, which provides comfort conditioning along with the air washing.

*Air Problems Solved!*

Order Your Copy Now. FAN ENGINEERING, 5th EDITION is industry's authority on air and air problems. 808 pages. Pocket size. Every engineer should have a copy. Send check or money order. **$6.00** postpaid.

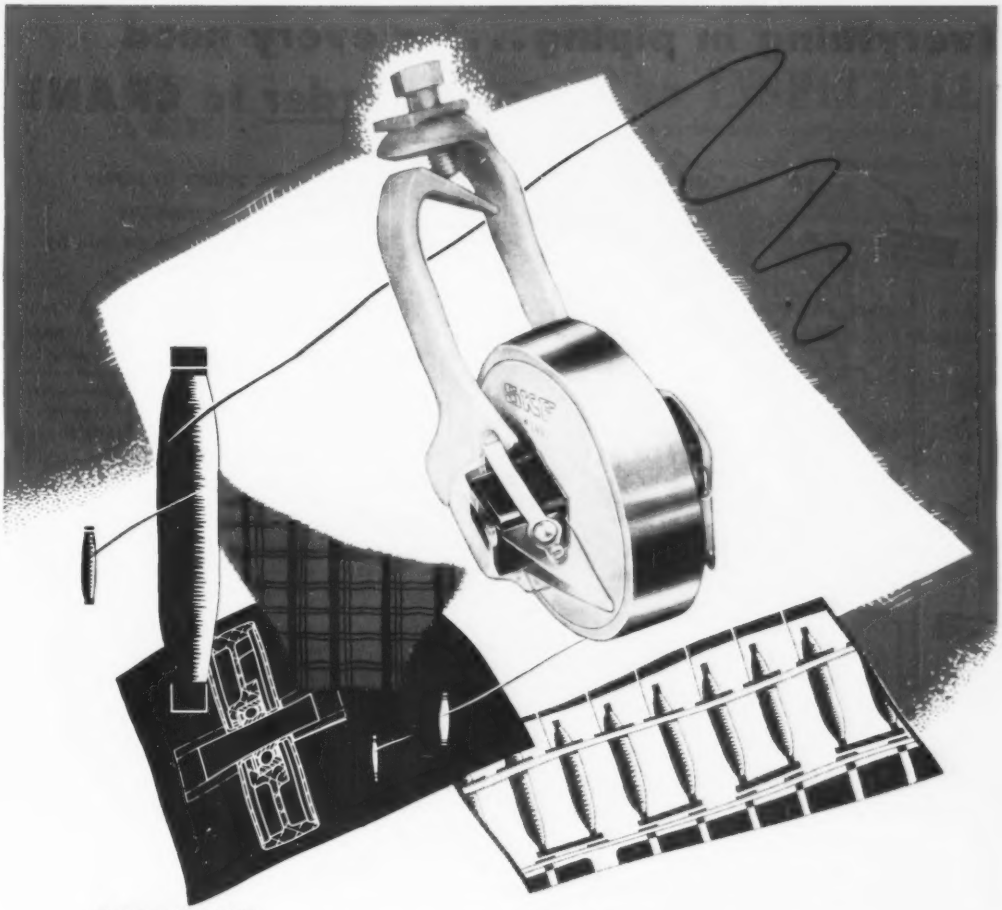
"Buffalo" FIRST FOR FANS

# BUFFALO FORGE COMPANY

184 MORTIMER ST. BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Branch offices in all Principal Cities

VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT PRESSURE BLOWING | EXHAUSTING



# NEW! SKF ball bearing tension pulleys

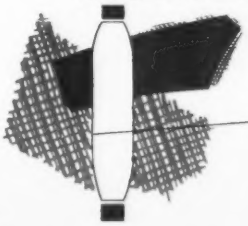
The Textile Industry has long recognized the performance advantages of tape tension pulleys equipped with anti-friction bearings. SKF pioneered in the development of anti-friction tension pulley for tape drives in the Textile Industry. Now, SKF offers one which instantly replaces the old plain bearing pulley WITHOUT CHANGEOVER EXPENSE.

This strong, light, aluminum pulley is mounted upon the famous SKF Red Seal Bearing . . . secured to a stationary shaft. In addition, the disc shields are stationary – only the pulley rim rotates. Thus, where dirt and lint normally collect at the bracket there is no rotation.

**Check these features of SKF's new ball bearing tension pulleys:**

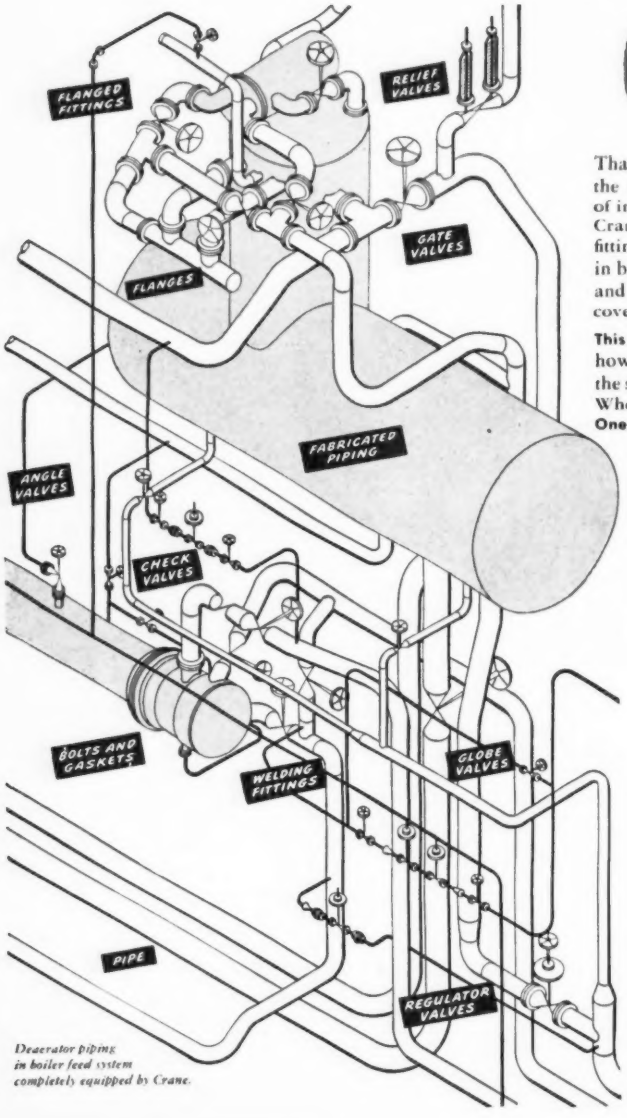
- Pre-lubricated at the SKF factory.
- 25,000 service hours without attention.
- Fits old bracket . . . new bracket expense eliminated.
- Clean . . . lubricant cannot leak.
- Minimum power—constant speed . . . quality of yarn improved—"twist per inch" more uniform.
- Longer tape life due to lighter tape tension and less slippage.

*Three types of Plastic Supporting Blocks are available . . . permit adaptation of SKF Tension Pulley to H & B, Saco-Lowell or Whitin standard spinning brackets. Write for new pamphlet No. 288. SKF Industries, Inc., Philadelphia 32, Pa.* 6675



TEXTILE BEARINGS ENGINEERED BY SKF

# Everything in piping . . . for every need
# . . . on one order to CRANE




*Deaerator piping in boiler feed system completely equipped by Crane.*

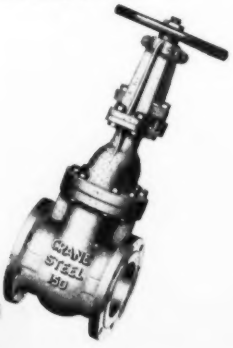
**ONE** SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY

That's the kind of service you get from Crane, the world's leading manufacturer and supplier of industrial piping equipment. "Everything" at Crane includes an unequalled selection of valves, fittings, fabricated piping, pipe and accessories—in brass, iron, steel and alloys. One catalog . . . and one order to your nearest Crane Branch cover whatever is needed for the job.

**This Deaerator Piping,** for example, illustrates how completely Crane supplies everything for the system, regardless of the fluids to be handled. When you standardize on Crane, you depend on **One Source of Supply** broad enough to simplify every piping procedure. You get better installations . . . avoid needless delays . . . by placing **Undivided Responsibility** on Crane for materials. And for **Highest Quality** in every piping item, specify Crane Quality—unsurpassed for more than 90 years.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
*Branches and Wholesalers Serving All Industrial Areas*

**FOR TOUGH STEAM SERVICES** *up to 750 deg. F., and for water, oil, air, gas and other non-lubricating liquids up to 500 deg. F., Crane recommends No. 47XR 150-pound Cast Steel Wedge Gate Valves. Designed for tight seating with long-lasting Exelloy to Nickel Alloy. Screwed, flanged or welding ends. Sizes: 2 in. and larger. See your Crane Catalog, p. 304.*




**EVERYTHING FROM . . .**

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

# CRANE

**FOR EVERY PIPING SYSTEM**

***IT'S NEW***

***IT'S BETTER***

***IT'S VAN VLAANDEREN***

# The INSPECTALL

*modern in every feature*

**Built to a precision and sturdiness not before available.**

**Exclusive design, one-station group control for easier, faster operation.**

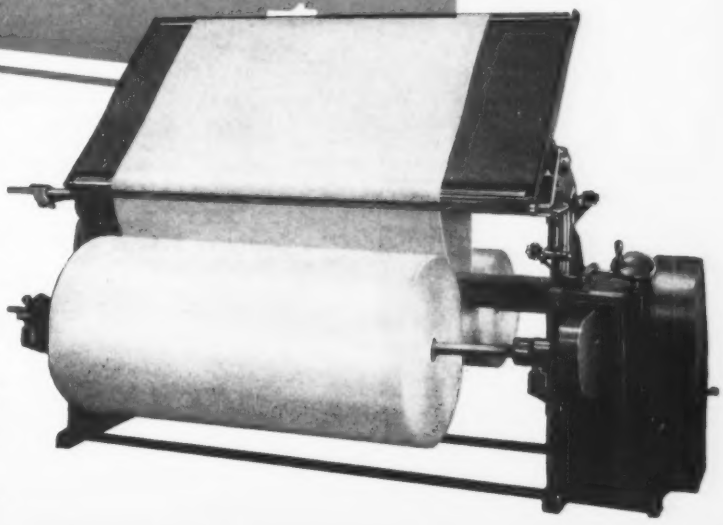
**Wide-range, variable speed control at operator's finger tips.**

**Instantly reversible, one-motion clutch control, hand operated from any examining position.**

**Let-off brake controlled from front of machine.**

**Any fabric can be examined face or back because take-ups operate clockwise or counter-clockwise.**

**Center-bar quills ball-bearing mounted . . . opposite end equipped with new, Van Vlaanderen positive center-bar lock.**



**This new, superior examining machine will handle rolls of any fabric up to 36" in diameter. Examining board is 36" high in 60" or 72" widths. Special widths available. Machine equipped with precision clock measuring yards and eighths. Attachment available for running tube to tube or shell to tube. Ball bearings throughout...sealed for life. Completely enclosed drive. Oversize disk clutches. Hard chrome-plated guide rolls.**

***Ask us about this machine.***

# VAN VLAANDEREN MACHINE COMPANY

**370 Straight Street • Paterson 3, New Jersey**

*World's largest manufacturer of machines for processing modern fabrics*

## Grip the Sides of

# ANY V-Belt...

## FEEL the Sides CHANGE SHAPE

**as the belt Bends –**

## -That SHOWS you Exactly WHY

# THE CONCAVE SIDE

(U. S. PATENT NO. 1813698)

## SAVES You MONEY

***Bend any V-Belt and you can actually feel its sides change shape.***

That's because the bending puts the top of the belt under *tension*, while the body undergoes *compression*. Naturally the sides of the belt *bulge out*—and if the belt is built with *straight sides*, you get the result shown in Figures 1 and 1-A, below:—

Straight-Sided V-Belt

How Straight-Sided V-Belt Bulges in Sheave-Groove.

Clearly, the bending forces a straight-sided V-Belt into a shape that does not fit the sheave-groove—and the bulging produces excessive wear along the *middle* of the *sides*.

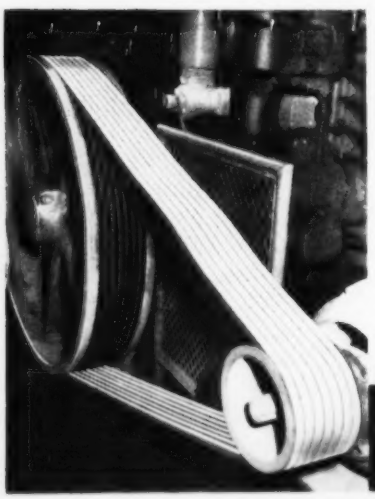
Now, bend the V-Belt built with the precisely engineered Concave Side (U. S. Patent No. 1813698)—the Gates Vulco Rope.

Gates Vulco Rope With Concave Side.

No Side Bulge. Precise Fit in Sheave-Groove.

You get the same shape change but *now* the new shape *exactly fits* the sheave-groove as shown in Figures 2 and 2-A.

Results—(1) *Uniform* side-wall wear; *longer* life. (2) *Full* sidewall grip on the pulley; carries heavier loads and sudden load increases without slippage — a big increase in drive efficiency — saving belt wear and also saving power!



### The Concave Side is *MORE IMPORTANT NOW* Than Ever Before

Because the *sides* of a V-Belt are what actually *drive* the pulley, it is clear that any increased load on the belt means a heavier load that must be transmitted to the pulley *directly* through the belt's sidewalls.

Now that Gates *SPECIALIZED* Research has made available to you SUPER Vulco Ropes—carrying fully 40% higher horsepower ratings—the life-prolonging Concave Side naturally delivers greater savings today than ever before.

THE GATES RUBBER COMPANY
DENVER, U. S. A.
*The World's Largest Makers of V-Belts*

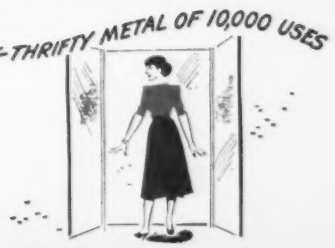
Gates
REG. U.S. PAT. OFF.

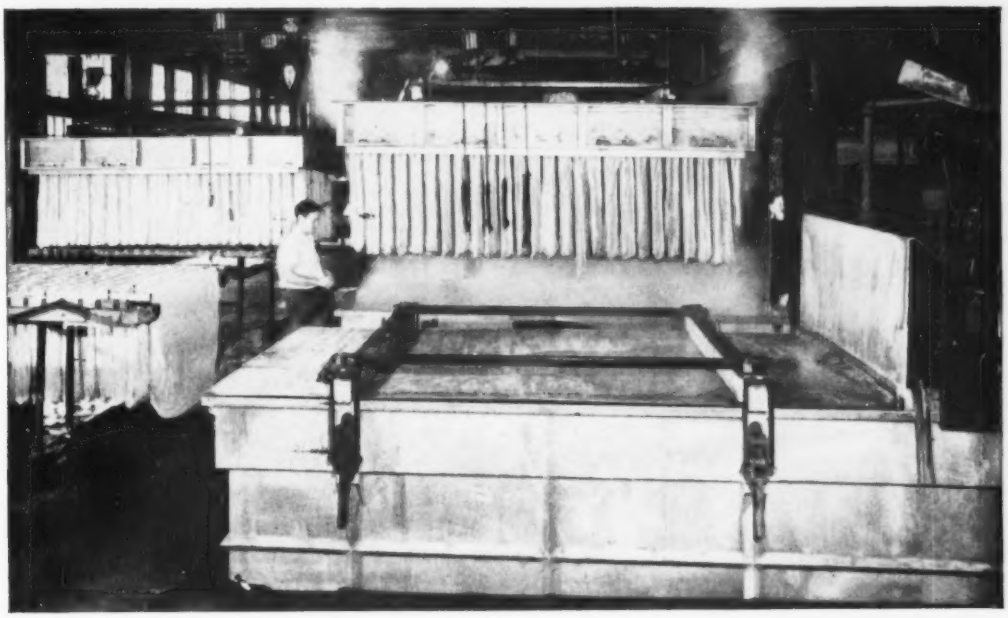
492

The Mark of SPECIALIZED Research

**GATES VULCO ROPE DRIVES**
Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 91 Foreign Countries

**ENDURO HOLDS COLORS TRUE.** With dyeing equipment of ENDURO Stainless Steel you can make lightning-fast changes from light to dark, or dark to light shades with no danger of carry-over. Furthermore, ENDURO does not react to dye bath chemicals or bleaches—hence, colors always are true and bright. For 20 years, this versatile metal has been proving its product-protecting and cost-cutting abilities in dye vats, racks and sticks, dry cans, fulling machines, oxidizing swifts, reels, rolls, sizing equipment, yarn boxes, etc.



# ...AND NOW FOR LOWER MAINTENANCE COSTS

Republic ENDURO Stainless Steel is not an ordinary metal. It is a material of many advantages—for many uses. And, best of all, it *costs less in the long run.*

That's because ENDURO is so tough and strong—resists rough usage and abuse. It resists rust and corrosion, even when subject to constant dampness. No matter how many times it is cleaned, it stays new looking—never needs refinishing because it is solid stainless steel all the way through. It never chips or cracks. It's more than a match for the roughest, toughest service.

Its cost? Much lower in the long run than you may think—because it requires little or no maintenance and lasts indefinitely. Write us, and we shall be glad to send you further information.

**REPUBLIC STEEL CORPORATION**
*Alloy Steel Division • Massillon, Ohio*
**GENERAL OFFICES • CLEVELAND 1, OHIO**
Export Department: Chrysler Building, New York 17, N. Y.

*Enduro* **STAINLESS STEEL**

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REPUBLIC STEEL

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**Dayton Rubber**

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

# TEXTILE WORLD'S FELT FLOW CHART

***HIGHLIGHTS:*** *Felts range from soft fabrics to hard sheets and polishing wheels — Many uses are specialized industrial — Some early processes similar to those for yarn manufacturing — Finishing processes often follow those for cloth.*

FELTING, believed to be older than weaving, differs from all other methods of fabricating wool in that the fibers are induced to creep into a natural, self-tightening mat, instead of being guided into a twisted and woven arrangement or made cohesive by foreign agents. A dense, three-dimensional fabric results, which is usually exceptionally durable.

As wool is capable of embracing and holding many other fibers, an endless variety of blends may be felted, producing a wide range of types.

All types of felt such as are here described are produced by one general method, derived from the ancients, but mechanized and controlled by modern methods in two principal steps:

1. Carded batts are "hardened" into a kind of loose, unwoven cloth pad.

2. Pads are shrunk by fulling until the required density has been attained.

Preliminary treatments of scouring, picking, blending, and carding parallel similar steps in other textile processes. In hardening, the batts are first steamed, moistened, and lubricated, and then agitated in a hot, vibrating platen press, a treatment that causes a general migration of the individual fibers. In fulling, sheets or pre-formed wheels are kneaded in hammer mills to produce a further integration of the fibers, increasing density. Washing, dyeing, drying, and other terminal operations parallel conventional lines, except that the very hard felts are sanded or lathe-turned instead of being sheared or hot-rolled.

Felt cutting, which often includes the fabrication of mechanical felt parts by stitching, molding, gluing, impregnating, laminating, and other special operations, is a highly developed terminal division of the felt industry.

Wool felt is an intermediate structural or processing material that is used by more than a hundred industries. For their manifold purposes, something like 150 different types of felt are produced by the basic methods here depicted. Multiply each of these types by variations in thickness, color, and finish, and you have a total of one thousand or more items of finished goods which this division of the textile industry turns out; yet only a few of the many thousand resulting applications are generally known outside the respective consuming groups.

Wool felt, sometimes called "pressed wool felt," is officially defined by The Felt Association – which is composed of manufacturers, jobbers, and cutters – as follows:

"Felt is a fabric built up by the interlocking of fibers by a suitable combination of mechanical work, chemical action, moisture, and heat, without spinning, weaving, or knitting. It may consist of one or more classes of fibers; wool, reprocessed wool, and/or reused wool, with or without admixture with animal, vegetable, and synthetic fibers . . .

"Felt as defined here is commonly referred to as wool felt, and does not include punched, woven, synthetically bonded, stitched, quilted, paper, or other materials of felt-like appearance which are products of entirely different construction."

**THIS FLOW CHART** is the fifth in TEXTILE WORLD's series. Reprints of any of the five can be obtained, as long as the supply lasts, from TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y. Prices are as follows: Cotton, wool, or continuous-filament flow charts, 25¢ each; any one of these in quantities of 20 or more, 15¢ each. Knitting or felt flow chart, 15¢ each; either one of these in quantities of 20 or more, 10¢.

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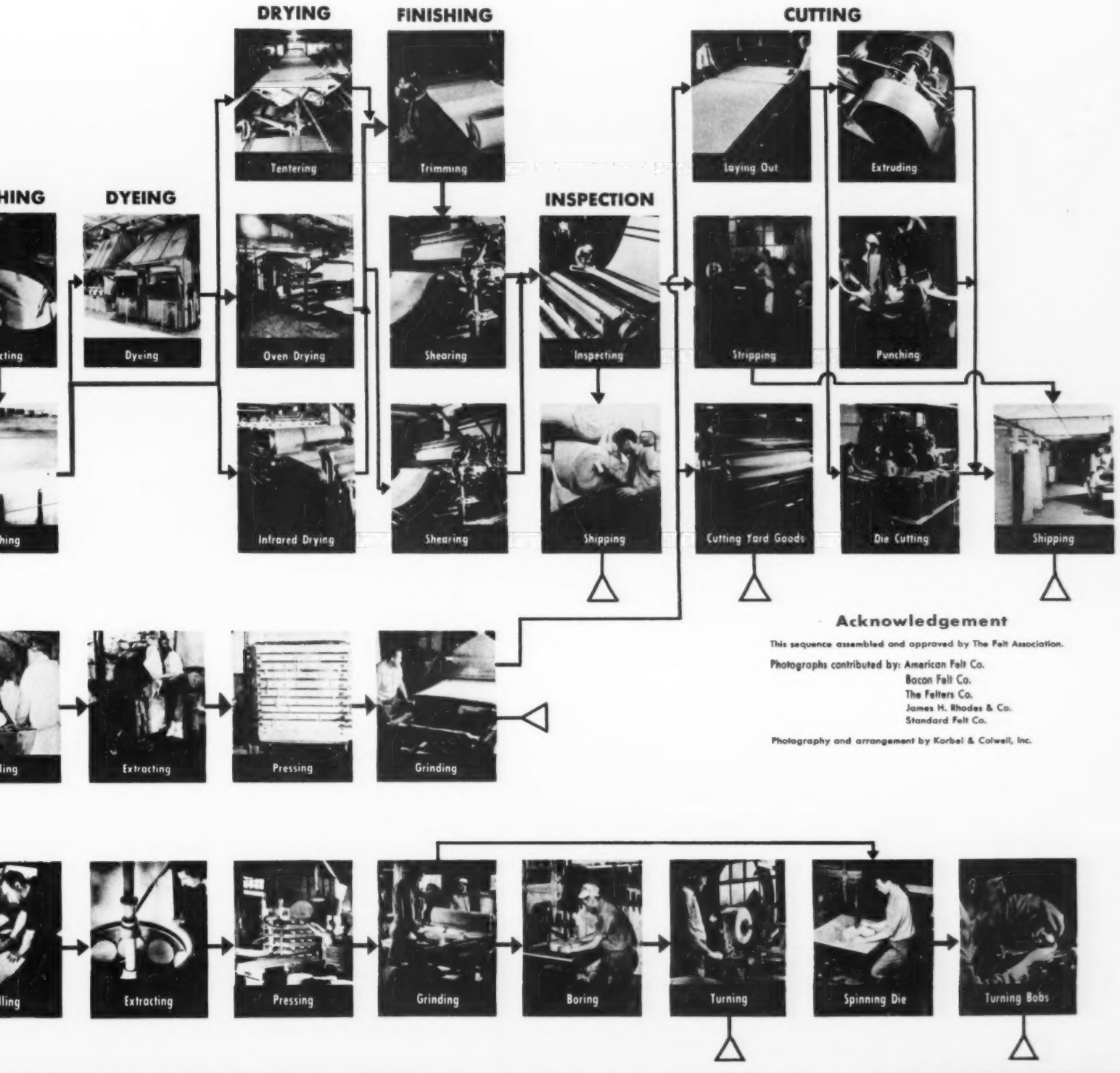
RAW STOCK
CARDING
HARDENING
FULLING
ROLL FELTS
Raw Stock
Crossing
Laying Out
Fulling (a)
TESTING
BLENDING
WASHING
Sorting
Research
Picking
Forming
Combination Setting
Steaming
Fulling (b)
Extracting
Scouring
Testing
Mixing
Finishing
Lapping
Hardening
Fulling
Washing
SHEET FELTS
LEGEND
Normal Flow
Alternate
Termination
Garnetting
Lapping
Laying Out
Hardening
Fulling
FELT WHEELS
Carding
Weighing
Sprinkling
Compressing
Hardening (a)
Hardening (b)
Fulling





## Acknowledgement

This sequence assembled and approved by The Felt Association.

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James H. Rhodes & Co.
Standard Felt Co.

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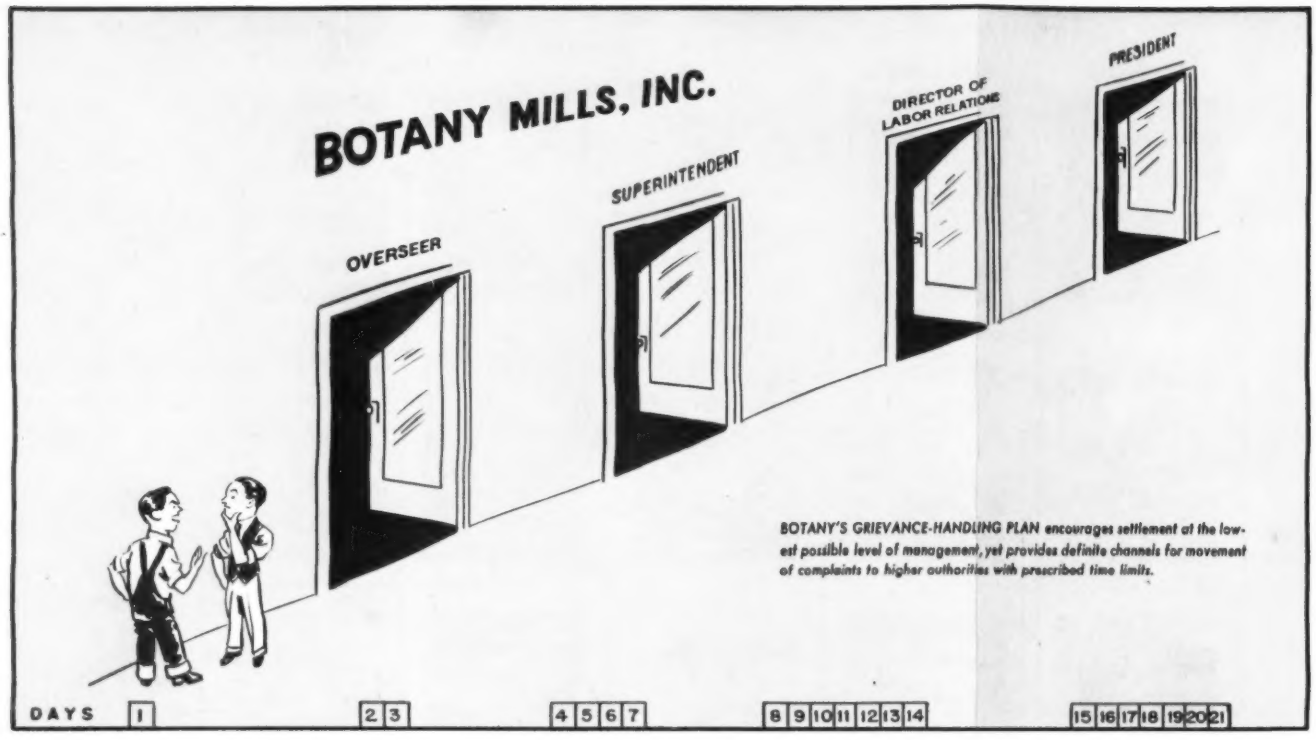

BOTANY MILLS, INC.
OVERSEER
SUPERINTENDENT
DIRECTOR OF LABOR RELATIONS
PRESIDENT
BOTANY'S GRIEVANCE-HANDLING PLAN encourages settlement at the lowest possible level of management, yet provides definite channels for movement of complaints to higher authorities with prescribed time limits.
DAYS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

**Supervisor**
receives complaint of aggrieved employee. *Supervisor must settle in 1 day* or submit in writing to---

**Overseer**
considers report, investigates, and *must settle in 2* days or submit report to---

**Superintendent**
considers reports, investigates, and *must settle in 4* days or submit report to---

**Director of Labor Relations**
considers reports, investigates, and *must settle in 7* days or submit report to---

**President**
through a personal representative considers reports, investigates, and must settle in 7 days or prepare case for arbitration.

# How Botany Mills Handles GRIEVANCES

***HIGHLIGHTS:*** *Definite procedure insures settlement in 21-day period or case goes to arbitration — Forms keep facts straight, aid broad management policies.*

*Based on*
**THE BOTANY PLAN***

A WELL-DEFINED procedure for consideration and settlement of grievances is in operation at Botany Mills, Inc., Passaic, N. J. Five steps insure that any grievance is considered by authorities competent to settle it within a given period of time.

The channels through which complaints travel insure that grievances are settled at the lowest possible managerial level.

The time limits prevent stalling and accumulation of cases, assure the worker of consideration of his case, and insure arbitration after 21 days if the grievance is unsettled.

In addition, time is provided for investigation and cooling off without unnecessarily delaying the movement of unsettled complaints to top management.

Reports and records required help eliminate grievance causes, help promote better relations, help improve the grievance procedure, make available to all levels of management information and recommendations in previous steps, and permit circulation of type cases. Also, written grievance reports establish and clarify the record and discourage petty complaints.

According to Botany's personnel department, the number of grievances which reached step four was reduced by about one-third during a year's operation of the plan. In June, 1947, 94 grievances reached step four; in May, 1948, only 28 reached step four. The fourth step was selected as an index as records of grievances settled in lower echelons are less accurate. However, settlements of grievances in the first three steps are estimated to have increased proportionately during the year.

The company further states, "In addition to the improvement in the settlement of grievances at lower echelons, the relations between supervision and workers, including union shop representatives, are far more amiable and understanding. This improvement in mutual relations is readily discernible and most gratifying both to the company and to the union."

*A manual issued jointly by Botany Mills, Inc., and its union describing the Botany Labor Relations School and procedures taught therein.



**How Bo**

At Botany, a "gri
inary causes for
justed. When an
made to adjust it

## Step 1

***Who participates?***
The aggrieved emplo
diate supervisor.

***What happens?***
Grievance is stated o

***How long is allowed***
One day.

***What if grievance is***
Grievance is reporte

***What report is made?***
Supervisors make writ
below:

BOT

Department Drawing

settled

No. Date Clock No.

1. Feb. 2 1064

2. Feb. 3 1065

3. Feb. 11 994

This form is to be made o
nals), one copy to superi
other record required fro

## w Botany Defines a "Grievance"

y, a "grievance" is any complaint based on real or imag-
ses for dissatisfaction which a worker feels should be ad-
/hen an employee has a grievance, an earnest effort is
adjust it by the five-step procedure outlined here.

# 1

**tes?**

d employee and/or his shop steward and the employee's imme-
r.

**?**

stated orally.

**llowed for settlement?**

**ance is not settled?**

reported in writing to the department overseer by supervisor.

**s made?**

ake written monthly reports of grievances settled on form shown

**BOTANY MILLS, INC., Passaic, N. J.**

raving

Summary of grievance reports
settled in step No. 1 for month of February 1949

| Clock No. | Nature of Grievance | How settled |
|---|---|---|
| 1044 | Worker complained that after task assigned him had been completed, he was required to do other work for the remaining two hours of the shift. | Informed that company gives 8 hours' pay for 8 hours work and unless worker is willing to do work assigned him he will be sent home. Worker understood and was satisfied. |
| 1049 | Worker complained that she was not allowed to cut the spindle while her machine was in motion. | Informed that she was violating safety rules and failure to obey would lead to disciplinary action. |
| 994 | Worker complained that pay for previous week did not include overtime put in Saturday afternoon at double time. | Shown provisions of contract that double time is paid only for Sunday work. Worker satisfied that terms of contract were misunderstood. |

Will Rise
Section Hand

is to be made out in triplicate at end of month. One copy to director of labor relations (through chan-
copy to superintendent of division (through channels), and one copy retained by section hand. No
ord required from section hand. All copies of step 1 form will be on white paper.

# Step 2

***Who participates?***

Overseer and shop steward.

***What happens?***

Based on report from employee's supervisor, overseer investigates grievance and fills out form shown below. This is considered in meeting with steward along with steward's report.

***How long is allowed for settlement?***

Two days.

***What if grievance is not settled?***

Overseer forwards supervisor's report and his own to division superintendent.

***What report is made?***

See form below:

**BOTANY MILLS, INC., Passaic, N. J.**

*Department* Woolen Spinning *Clock No.* 10101 *Date* Feb. 1, 1949
**GRIEVANCE REPORT, STEP NO. 2** *Grievance No.* 13

*Statement of Grievance (Attach written grievance, if any)*

Worker complained that material coming up to him is of a character which puts a greater work load on him. He requests a temporary wage adjustment to compensate for the additional work load during the time this material is being processed.

*What Does Your Investigation Show? (List all additional facts. Present them in a clear manner.)*

The grievance was investigated by the section hand and the shop steward and the following facts were mutually arrived at:

1. The material complained of is worse than the ordinary run of material.
2. There is an additional work load.
3. Piecework averages have dropped $.07 per hour.
4. Workers are grumbling about the situation.
5. This grievance covers the past two-week period.
6. The union asks that the job be rerated.

In view of the fact that a decision in this case is beyond the scope of the authority of the section hand, the matter was referred to the overseer for a decision. The section hand did recommend that some adjustment should be made.

The overseer called for a check on the piece rate by the Plans and Controls Department did not find that there was an overload. The overseer checked his production schedules and found that this bad material will run only one more week.

*What Do You Recommend?*

I recommend that there be some sort of an adjustment to be determined by higher authority.

*What Does the Shop Steward Recommend?*

The shop steward recommended piece rates to be changed to give worker $.05 more than the present average hourly earnings.

*Action Taken by You?*

Matter forwarded to the superintendent with recommendation to make an adjustment.

*Put an X in the appropriate square below:*

☐ Is grievance considered closed?

☒ Is grievance being forwarded to Step No. 3? Date Feb. 2, 1949

Hal Hess — Overseer
Geo Vance — Shop Steward

If case is not settled in step 2, the overseer, who fills out the record in triplicate, keeps a copy, and sends the other two to the department superintendent for use in preparing for step 3. The form for step 3 will be filled out by the superintendent from information furnished by overseer and from any other source available.

# Step 3

***Who participates?***

Superintendent of division and shop chairman.

***What happens?***

Superintendent investigates grievances based on reports submitted and fills out form shown below.

***How long is allowed for settlement?***

Four days.

***What if grievance is not settled?***

Superintendent's report with others attached is forwarded to director of labor relations.

***What report is made?***

See form below:

**BOTANY MILLS, INC., Passaic, N. J.**

*Department* Woolen Spinning *Clock No.* 10101 *Date* Feb. 4, 1949
**GRIEVANCE REPORT, STEP NO. 3** *Grievance No.* 13

*What Does Your Investigation Show? (List all additional facts. Present them in a clear manner.)*

Facts are same as in step 2 with the following additions or exceptions. Production schedule for this type of material will be six weeks and not three weeks. There are eight workers involved--four on the first shift and four on the second shift with none on the third shift. From partial records available there is an indication that the drop in average hourly earnings may reach $.10 instead of $.07 per hour.

The type of material involved necessitates much closer supervision over the operation of the machine, has more breaks, requires greater physical effort on the part of the worker, and is of a colored mixture that has a tendency to cause eyestrain on the part of the worker. A preliminary lighting test conducted by me indicates that the substitution of a blue-white bulb instead of a white bulb would obviate the eyestrain because the effective blue light tends to harmonize the colors. Further investigation indicates that the cost of replacing bulbs would be $18.

*What Do You Recommend?*

I recommend that Plans and Controls Department institute a new temporary piece rate covering the work for the six-week period. I further recommend that this problem be disposed of speedily because the further drop in average hourly earnings on the part of the workers indicates that the workers are getting disgusted, losing interest in their job, and that production is falling off.

*What Does the Shop Chairman Recommend?*

Recommends that the workers be given $.05 increase. He further goes along on the recommendation of the superintendent with this exception, that the new piece rate be permanent instead of temporary, arguing that there is a possibility that these overloads will recur frequently.

*Action Taken by You?*

I submitted a requisition to the Engineering Plant to change immediately the type of bulbs and included in the requisition an estimate of cost and requested immediate action on this in view of the labor relations involved. I forwarded this grievance to step 4 without wasting time.

*Put an X in the appropriate square below:*

☐ Is grievance considered closed?

☒ Is grievance being forwarded to Step No. 4? Date Feb. 7, 1949

Geo. Shott — Department Superintendent
Wm Steward — Shop Chairman

If case is not settled in step 3, the superintendent, who fills out the record in triplicate, keeps his copy, and sends the other two to the director of labor relations for use in preparing for step 4. The form for step 4 will be filled out by the director of labor relations from information furnished by superintendent and from any other source available

# Step 4

***Who participates?***

Director of labor relations and business agent of union.

***What happens?***

Director of labor relations considers previous reports, investigates grievance, makes out report form shown below.

***How long is allowed for settlement?***

Seven days.

***What if grievance is not settled?***

Director of labor relations submits his and other reports to director of industrial relations.

***What report is made?***

See form below:

**BOTANY MILLS, INC., Passaic, N. J.**

**Department** Woolen Spinning **Clock No.** 10101 **Date** Feb.8, 1949
**GRIEVANCE REPORT, STEP NO. 4** **Grievance No.** 13

***What Does Your Investigation Show?*** *(List all additional facts. Present them in a clear manner.)*

My investigation showed facts are as outlined in step 3 with the following additional information. Production of that particular type of material is deemed essential by the company in order to fulfill contracts. There is no likelihood of having to manufacture same type of materials in the future because of difficulties of manufacture and color in quality tests.

Botany's policy in case of overload has never been to pay a premium for such overload but rather to remove the overload or the cause of it. It is also a Botany policy to maintain average hourly earnings where they are adversely affected by circumstances beyond the control of the workers.

***What Do You Recommend?***

I recommend that the workers' average hourly earnings be guaranteed without loss in earnings providing they maintain the production schedule of the first two weeks. I concur in the action taken by the superintendent in asking that the lights be changed. I disagree with the superintendent in the establishment of a temporary piece rate in view of the fact that the particular material will be completely run through in a six-week period. I disagree with the recommendation of the shop chairman to set up a permanent new rate and pay a $.05 wage increase. There is no likelihood of this particular type of overload occurring again through this type of material.

***What Does the Business Agent Recommend?***

The Business Agent recommends that some additional wage increase be given to the workers during this period but agrees in principle with my recommendation.

***Action Taken by You?***

I reported the status of the matter to the Director of Industrial Relations who confirmed my point of view in this case and told me to proceed with it and arrange a settlement along that line. I called another conference with the business agent and explained to him the workings of our policy in cases like these and asked the union to go along with the company for this temporary period of six weeks on the basis of guaranteeing average hourly earnings. I pointed out to the business agent that this was for a temporary period only and if it were to continue beyond this temporary period we could then reconsider the matter. The business agent agreed to go along finally with my recommendation on my assurance that this was a temporary problem.

**Put an X in the appropriate square below:**

☒ Is grievance considered closed? Feb. 14, 1949 (Date)

☐ Is grievance being forwarded to Step No. 5? (Date)

B. Hall — Director of Labor Relations

Ernest P. Brown — Business Agent

Director of labor relations reads overseer and department superintendent report and then fills out his own report.
If case is settled in step 4, reports of steps 2, 3, and 4 (all records on the case, stapled together) are filed in Labor Relations Department.
If case is not settled, director of labor relations should submit all his copies of steps 2, 3, and 4 to the director of industrial relations to be used in preparing for step 5.

# Step 5

***Who participates?***

A personal representative of the president of Botany Mills, Inc. (usually director of industrial relations), and personal representative of president of national organization of union.

***What happens?***

Representative of president considers reports submitted, makes own investigation, and reports additional facts on form shown below. Discusses case with representative of union.

***How long is allowed for settlement?***

Seven days.

***What if grievance is not settled?***

Director of industrial relations prepares case for arbitration.

***What report is made?***

See form below:

**BOTANY MILLS, INC., Passaic, N. J.**

**Department** Finishing **Clock No.** 7318 **Date** Feb. 14, 1949
**GRIEVANCE REPORT, STEP NO. 5** **Grievance No.** 14

***What Does Your Investigation Show?*** *(List all additional facts. Present them in a clear manner.)*

The grievance reads as follows:

Worker broke eyeglasses through negligence of company. Demands $15 for new pair of eyeglasses. The facts are as follows:

Worker in a habit of pulling down shade when sun shines in the room, and pulling up the shade when the sun does not shine in the room. On day of accident, the worker pulled down shade and it fell, knocking his glasses off and breaking them. Botany's policy is to pay for damage to personal property only when it is clearly the fault of Botany. Workers claimed the shade was defective. Inspection of shade and shade supports revealed no defect. Worker was not injured. New glasses cost $15. Union has recommended that the worker be reimbursed for the cost of the eyeglasses. The company's up to step 5 has been to deny reimbursement on the basis it was no fault of the company. Worker will not buy new glasses unless assured that company will reimburse him. Work of employee without his glasses is substandard.

***What Do You Recommend?***

1. That the worker be denied payment of the glasses.
2. Recommend that he be sent to the hospital to determine if he is in a position to do his normal work without his glasses.
3. If he is not physically fit to perform work without glasses, he should be laid off for medical reasons, unless he corrects the situation.

***What Does the National Representative of the Union Recommend?***

Recommends that the worker be paid for glasses in view of the fact that there is nothing to show that the worker was at fault.

***Action Taken by You?***

Conference was called at which time a representative of the national union and the Director of Labor Relations were present. The presence of the worker was not required because the facts were not in dispute. Botany's policy of paying for damage of personal property only in cases specifically caused by its negligence was discussed at length. Admittedly it would be poor practice to start. The union was asked to point out to the worker that unless he is in fit physical condition to perform the work he would not be permitted to work. The union agreed to instruct the worker to purchase glasses so that he could retain his employment. The union further decided that in the absence of negligence on the part of the company, it would not press the claim.

**Put an X in the appropriate square below:**

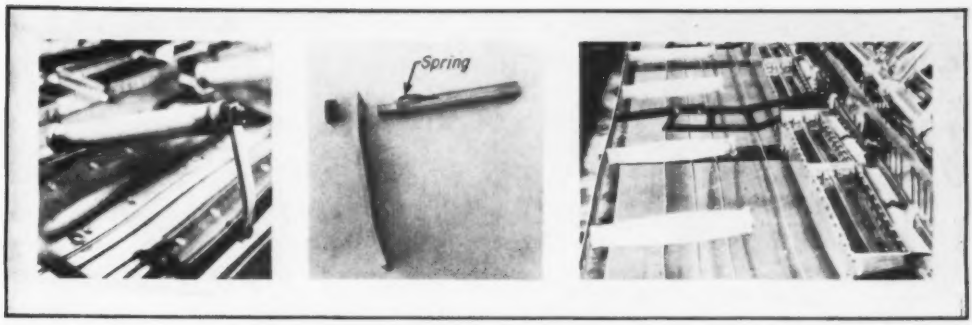
☒ Is grievance considered closed? Feb. 19, 1949 (Date)

☐ Is grievance to go to arbitration? (Date)

U R Cassell — Director of Industrial Relations

H. Gay — Mgmt. Manager

Director of industrial relations reads report of the overseer, department superintendent, and director of labor relations and prepares his case. If case is settled in step 5, it is closed and filed. If case is not settled, director of industrial relations prepares the case for the President of the Botany Mills, Inc. for arbitration purposes.




*MOUNTING OF PIRN on the machine depends on the make of machine being used. Better unwinding on a new Reading machine is obtained with the pirn set at an angle (left) by means of the mounting rod and spindle shown at center. A horizontal mount is used on the new Kalio machine, as shown at right.*

# *Yarn Tension Is the Key to* PROPER HOSIERY LENGTH

***HIGHLIGHTS:*** *Tension controls size and shape of knitted stitches; these affect hosiery length—Yarn wind, tension felts, and rings have critical influence on tension—Sinker tolerance is the most critical setting point.*

**By H. B. LeFEAUX**
*Consulting Editor, TEXTILE WORLD*

THE SOLE PURPOSE of applying tension to full-fashioned knitting yarn is to cause uniform withdrawal from the cone and to prevent an excess of yarn being thrown when the carrier comes to the end of its travel. This allows the needles to form loops, each of which will be of the same size and shape. The trend today is to finer yarns and higher-speed machines. The proper amount of tension on the yarn is of paramount importance if quality hosiery is to be knitted at top production rate.

Proper winding of yarn on the cone is the first requisite for uniform tension in unwinding. Yarn that is wound tight and loose on a cone will unwind at varying speed, increasing and decreasing the yarn tension during knitting.

If felts are allowed to remain in the troughs too long, they become hard and sticky. This condition will prevent the proper absorption of moisture and result in the application of a variable and improper tension to the yarn. Felts should be changed at least every 3 months to overcome this condition.

Tension rings are another source of uneven tension. Rings and tension wires must be kept clean in order that the rings will slide freely up and down the wires. A good stainless-steel ring is far superior to the old-type brass ring, especially when 15-den. nylon yarn is being knitted. The stainless-steel ring will not cut and nick half so quickly as the brass ring.

**PIRNS USED.** Recent reliable information shows that most full-fashioned mills are still knitting 15-den. yarn directly off the pirn. The 15-den. yarn that is thrown, sized, and coned probably has a little more advantage than that directly from the pirn when it comes to controlling hosiery lengths on the machine.

Setting the pirn at an angle on a new Reading machine lets the yarn reel off more easily and thus eliminates excessive tension. In this particular set-up, the yarn is run through water in the moistening box, through the tension ring, and over the bottom snapper rod. No snapper is used because of extra tension that ordinarily results from its use. Another reason for not using the snapper is elimination of changing the porcelain because of yarn cutting into it.

*(Continued on page 206)*

### HOW TO KNIT PROPER LENGTHS

1. Wind cone properly.
2. Keep tension rings and guides clean.
3. Clean moistening troughs periodically; change felts at least every 3 months.
4. Adjust snapper correctly; change nicked porcelains.
5. Keep proper clearance between sinker backs and verge plates.
6. Keep sinker heads and jack heads clean and well lubricated.
7. Check coulier motion. (Faulty movement of the coulier action caused by worn gear teeth will cause the formation of uneven loops because of the variations in tensions on the yarn and irregular action of the loop-forming elements.)
8. Maintain uniform humidity and temperature in the plant.

*DEEP BALE CLAMP with 36-in. arms 30 in. deep was shown by Automatic Transportation Co., Chicago 20, Ill. Minimum spread is 16 in., maximum is 56 in. Capacity is 2,400 lb. with a 40-in. load.*

# MATERIALS-HANDLING Show Brings Wealth of Ideas

***HIGHLIGHTS:*** *Large numbers of textile-mill men find applications to their production problems—Many special handling attachments for fork-trucks—Equipment displays often emphasized textile installations.*

**By WILLIAM A. NEWELL**
*Assistant Editor, TEXTILE WORLD*

A NEW ATTENDANCE RECORD, indicated by 17,000 registrations, was set for the third consecutive time at the 3rd Annual Materials-Handling Show held in Philadelphia this year. Again, more textile mill men than ever attended, according to estimates by TEXTILE WORLD's editors, by textile-mill men who attended, and by exhibitors. The textile-industry interest was also pointed out by *The New York Times* in an article describing the show.

Of the many mill men who stopped at TEXTILE WORLD's booth, not a single one failed to state that he had picked up useful ideas at the show. Several stated they had seen things they didn't know existed. That men from such industry-leading mills as Pacific, Dan River, Fieldcrest, Mt. Vernon-Woodberry, and Robbins Cloth Mills were at the show should be an index of its value to all mills.

Many new types of equipment were displayed along with standard lines well known to the industry. Main centers of interest were the fork-truck exhibits which emphasized attachments for special handling tasks not making use of pallets, and in an electronic remote-control hoist shown by Yale & Towne Mfg. Co.

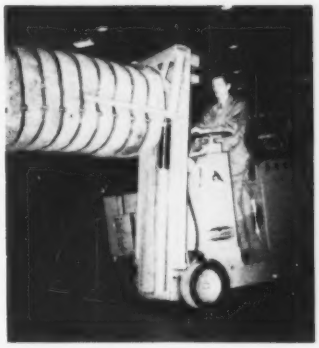
Textile-mill use of their equipment was emphasized by many exhibitors. Fork-truck makers showed bale attachments actually handling cotton bales, while conveyor and scale manufacturers often displayed photographs of their equipment at work in textile mills. Some conveyor installations thus displayed were for lap, roving-can, sliver-lap, section-beam, shipping-carton, and cloth handling.

To cover adequately every piece of equipment applicable in textile mills which was shown might well consume an entire issue of TEXTILE WORLD. As mill men know, most materials-handling equipment must be custom-engineered to each particular mill. In this report, TEXTILE WORLD feels it must devote its coverage of the show to that equipment shown which was new or which seemed to be most suitable for general application in the textile industry.

The following pages present, in the main, ideas rather than actual applications.

## BALE-HANDLING DEVICES WERE MANY AND VARIED

*BOTH BALES AND PALLETS can be handled by the truck shown by Yale & Towne Mfg. Co., Philadelphia 24, Pa. For bales, forks can be spread and contracted to grip sides. For pallets, forks are used in normal position.*



*NARROWEST BALE CLAMP was shown by Lewis-Shepherd Co., Watertown, Mass. Tubular arms can handle bale horizontally or vertically and are useful in maneuvering bales in preparation for storage.*

*A CAPACITY of 2,000 lb. enables this truck by Baker-Raulang Co., Cleveland, Ohio, with cotton-bale handling attachment to handle two bales. Spread of clamp is from 20 to 65 in.*

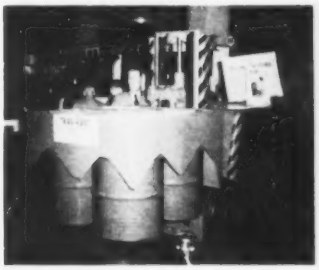
*BALE-HANDLING ATTACHMENT shown by Elwell-Parker Co., Cleveland, Ohio, handles bales horizontally or vertically. Capacity of the clamp is 1,000 lb., minimum spread is 18 in., maximum is 66 in.*

*COTTON CLAMP by Clark Equipment Co., Battle Creek, Mich., can handle two compressed or two gin bales endwise or three high-density bales. Arms can be raised 8 ft., 11½ in. from floor.*

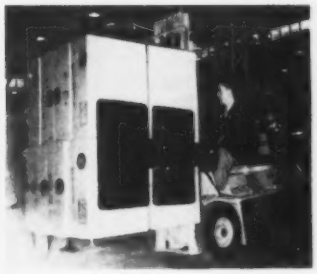
*BALE CLAMP for raw-cotton, waste, or cloth bales was also shown by Towmotor Corp., Cleveland, Ohio. One other bale clamp, shown by Hyster Co., Portland, Ore., is shown below with carton-handling arms.*

## FORK-TRUCK ATTACHMENTS FOR SPECIAL JOBS WERE NUMEROUS

*ROLL-HANDLING ATTACHMENTS may be applicable to handling and storing beams vertically. Wide grip pads on this truck by Elwell-Parker Electric Co., Cleveland, Ohio, minimize possibility of damage to yarn. Similar attachments were shown by Automatic, Towmotor, Hyster, and Lewis-Shepherd.*

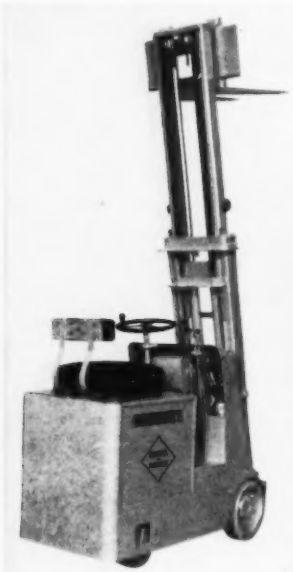


*ONE TO FOUR DRUMS can be handled without pallets by this drum carrier made by Trayner-Reinhart, Oakland 7, Calif., shown on a Crescent fork truck. Also available is a two-drum size. Drums are hydraulically gripped by steel-backed rubber-faced shoes which are easy on the drum surfaces.*



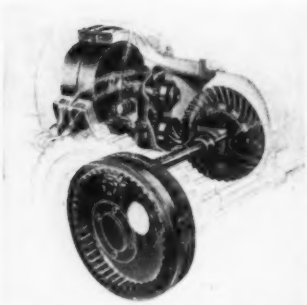
*CARTON-HANDLING ARMS on this 2,000-lb. truck by Hyster Co., Portland, Ore., can handle boxes gently and safely. Without large rectangular metal plates (which can be detached in a few seconds), gripping arms can be used to handle bales. Capacity of the "Load-Grab" shown is 1,780 lb.*

## SOME NEW FORK TRUCKS WERE SHOWN



*LIGHT WEIGHT AND COMPACT DESIGN are main features of this electric truck shown by Elwell-Parker Electric Co., Cleveland, Ohio. Weight is 4,550 lb., capacity is 2,000 lb. Width is 32½ in.*

*A NEW MODEL of the Transtacker, powered hand fork truck made by Automatic Transportation Co., Chicago, Ill., features a tilting mast. Tilt is 21° backward and 5° forward. Weight of the truck is 3,400 lb., width is 32½ in. Two models are available, one with a 64-in. single lift, the other with a 120-in. telescoping lift.*



*CLUTCH ELIMINATION is one feature of the new Dynatork drive demonstrated by Clark Equipment Co., Battle Creek, Mich. Power from the truck's engine is transmitted by magnetic induction. Two magnetic coils—one for forward and one for reverse—are in the flywheel and are surrounded by magnetic poles. A selector switch on the steering column provides finger-tip control of truck movement.*

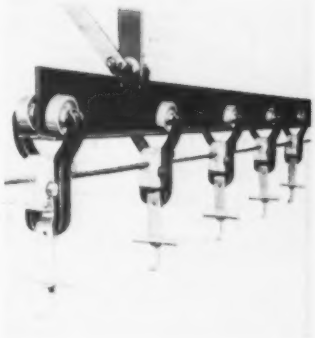
*NARROW SPACES common to textile mills are less of a problem to this lightweight (2,360-lb.) fork truck of 1,000-lb. capacity introduced at the show by Automatic Transportation Co., Chicago, Ill. Also available is a 1,500-lb.-capacity truck weighing 283 lb. Width of the truck varies from 27¾ in. with solid-rubber tires to 34 in. with pneumatic tires. Collapsed height is 78 in., lift is to 134 in. With a 30-in. load, the truck can stock at right angles in aisles under 8 ft. wide.*

*GASOLINE TRUCKS have been added to its line by Yale & Towne Mfg. Co., Philadelphia 24, Pa. The line features fluid drive, automotive controls, hydraulic lift, low mast heights, and rapid lifting. Several capacities are available.*

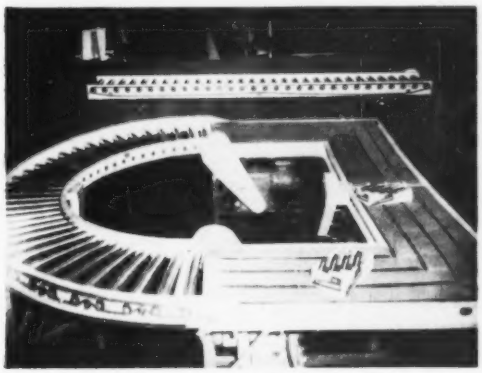
*COMBINING FEATURES of powered hand trucks with those of conventional fork trucks has resulted in the Transrider stacker developed by Automatic Transportation Co., Chicago, Ill. The new stacker also provides a seat for the operator, eliminating fatigue caused by walking.*

## NEW DESIGNS FOR CONVEYORS APPEARED

*CONVENTIONAL CHAIN LINKS with welded hooks are principal parts of this Chain-O-Flex conveyor distributed by Industrial Equipment Co., Chicago, Ill. Maximum load per hook is 50 lb. with hooks on 12-in. centers. Conveyor-tube parts, adjustable corners, and drive unit are said to be easily assembled with bolts and hand tools.*



*SPACING OF CARRIERS can be easily adjusted by loosening screws on this cable trolley conveyor shown by E. W. Buschman Co., Cincinnati, Ohio. Wheels have ball bearings.*



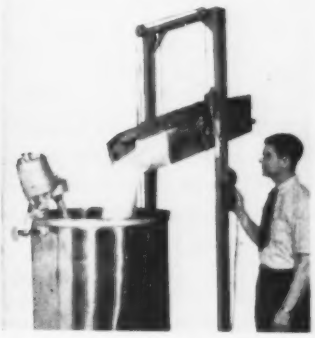
*TWO WAYS to get around a corner are shown in this demonstration unit shown by Harry J. Ferguson Co., Jenkintown, Pa. The curved roller section is power-driven. Power belt curve can be used where spacing of rollers prevents use of roller curve.*

*FLOOR-TO-FLOOR CONVEYING of boxes, trucks, bales, etc., can be done by the Stair-Levayor shown by Mato-Flow Co., Bay City, Mich. The lift can be installed in any open space or over an existing stairway. A wide range of types is available.*

## DEVICES DESIGNED FOR SPECIAL TASKS

*MIXING OF LIQUIDS can be speeded by use of this powered portable drum rotator shown by Morse Equipment & Hardware Co., Syracuse, N. Y. Containers from 1 to 55 gal. can be handled. A bank of heat lamps can be fitted beneath for warming contents. Speed of rotation can be varied.*

*THERBLIG TIMERS will appreciate the time- and motion-saving value of this truck. The spring-mounted bottom always keeps the top layer of the load at the top of the truck. Thus no bending over and reaching into the truck would be necessary in such operations as creeling or doffing.*



*A PORTABLE LIFT called the Upanover, shown by Jacob House & Sons, Buffalo 8, N. Y., would be useful in raising and emptying size and finish ingredients into mixing tanks, or for raising bobbins to the hopper of bobbin strippers. Parts are corrosion resistant.*

**TABLE 1. Number of Spindles Covered and Material Processed**

| State | Number of spindles | Raw material | | | | |
|---|---|---|---|---|---|---|
| | | Cotton | Rayon | Wool | Nylon | Blends |
| Georgia | 1,633,228 | 1,481,868 | --- | 9,040 | 5,000 | 137,320 |
| Alabama | 1,587,302 | 1,374,534 | --- | --- | --- | 212,768 |
| North Carolina | 1,480,192 | 1,224,868 | 145,288 | 16,112 | 11,000 | 82,924 |
| South Carolina | 539,666 | 521,142 | 5,460 | --- | 7,992 | 5,072 |
| Virginia | 230,142 | 180,028 | 68,074 | 2,040 | --- | --- |
| Total | 5,470,530 | 4,782,440 | 218,822 | 27,192 | 23,992 | 438,084 |
| Percentage | | (87%) | (4%) | (1/2%) | (1/2%) | (8%) |

**TABLE 2. Number of Dryers Covered**

| Type of dryer | Number according to state | | | | | |
|---|---|---|---|---|---|---|
| | Georgia | Alabama | North Carolina | South Carolina | Virginia | Total |
| Slasher | 165 | 142 | 124 | 45 | 38 | 514 |
| Stock | 20 | 2 | 19 | 2 | 1 | 44 |
| Tenter | 14 | 2 | 22 | 3 | 16 | 57 |
| Package | 10 | 8 | 24 | 12 | 2 | 56 |
| Cloth | 23 | 6 | 25 | 2 | 12 | 68 |
| (Others) | 15 | 6 | 16 | 3 | 8 | 48 |

**TABLE 3. Steam-Cylinder Dryers (Five Types Studied Individually)**

| Dryer | Material processed | Direct operating cost | | Pounds of steam per lb. of water removed | Heat-transfer efficiency (%) |
|---|---|---|---|---|---|
| | | Cents per lb. of material | Cents per lb. of water removed | | |
| A. 3-cylinder slasher | Cotton | 0.091 | 0.143 | 2.18 | 48.5 |
| B. 7-cylinder slasher | Rayon | 0.042 | 0.210 | 1.99 | 47.5 |
| C. 2-cylinder slasher | Blend (rayon-wool) | 0.120 | 0.210 | 1.80 | 61.5 |
| D. 4-cylinder slasher | Cotton | 0.105 | 0.200 | 1.47 | 75.4 |
| E. 37-cylinder cloth dryer | Cotton | 0.073 | 0.146 | 1.73 | 65.7 |

**TABLE 5. Hot-Air Dryers**

| Dryer | Direct operating cost (¢ per lb. of water removed) | Heat-transfer efficiency (%) |
|---|---|---|
| Stock dryer (avg.) | 0.205 | 50 |
| Warp-beam dryer | 0.447 | --- |
| Tenter dryer | 0.253 | 46 |
| Steam-cylinder dryers | 0.176 (avg.) | 60 (avg.) |

# TEXTILE DRYERS

***HIGHLIGHTS:*** *Steam-heated cylinders are the most practical drying method now used by mills — Better-designed equipment could improve present cylinder dryers as much as 20% — Hot-air, infrared, and high-frequency dielectric-heat dryers are practical, though expensive, for special and non-continuous applications.*

**By P. M. THOMAS,**
*Associate Editor, TEXTILE WORLD*

TEXTILE DRYING, as it is practiced, is not an efficient operation. Principally because of the design of present equipment, money is lost in all mills through loss of heat and drying production in practically all types of textile drying.

This information was gained by the Institute of Textile Technology, Charlottesville, Va., during a study of drying practices in mills in five states. The states covered were Georgia, Alabama, North Carolina, South Carolina, and Virginia.

Drying practices (raw stock, slasher, tenter, cloth, and warp beam) with equipment that included steam cans, hot air, vacuum extraction, infrared, and high-frequency dielectric heat were studied from the standpoints of efficiency and economy.

The important basic conclusions drawn were:

1. Steam is the cheapest source of drying heat.

2. Steam-heated cylinders (such as in slashers) are the most practical method now used.

3. Better use of heat, better removal of moist air, and better or more

**TABLE 4. Steam-Cylinder Dryers on Comparable Basis**

| Dryer | Material processed | Heat-transfer efficiency (%) | Pounds of steam per lb. of water removed | Pounds of water removed per hour | Average operating speed (yd. per min.) | Cost of steam to cylinders (cents per lb. water removed) | Moist-air exhaust system |
|---|---|---|---|---|---|---|---|
| A. 3-cylinder slasher | Cotton | 48.5 | 2.18 | 225 | 21 | 0.163 | Poor |
| B. 7-cylinder slasher | Rayon | 47.5 | 1.99 | 53 | 11 | 0.149 | None |
| C. 2-cylinder slasher | Blend (rayon-wool) | 61.5 | 1.80 | 218 | 25 | 0.135 | Fair |
| D. 4-cylinder slasher | Cotton | 75.4 | 1.47 | 342 | 46 | 0.111 | Good |
| E. 37-cylinder cloth dryer | Cotton | 65.7 | 1.73 | 1875 | 98 | 0.130 | Fair |

**TABLE 6. Electric Infrared Slasher (Actual Operating Cost)**

| Dryer | Operating cost, excluding labor and overhead | | Pounds of steam per lb. of water removed | Kilowatt hr. per lb. of water removed | Heat-transfer efficiency (%) |
|---|---|---|---|---|---|
| | Cents per lb. of material dried | Cents per lb. of water removed | | | |
| Infrared slasher (one installation) | 0.970 | 1.51 | --- | 1.24 | 23.1 |
| Steam-can slasher (four installations) | 0.120 | 0.210 | 1.80 | --- | 61.5 |
| Tenter dryer, hot-air (one installation) | 0.140 | 0.271 | 2.77 | --- | 45.9 |
| Stock dryer, hot-air (two installations) | 0.410 | 0.324 | 3.23 | --- | 35.0 |

**TABLE 7. Electric Infrared Slasher (Standardized Drying Cost)**

| Dryer | Drying cost (cents per lb. of water removed) | Cost of operating exhaust-and circulating-fan motors (cents per lb. of water removed) | Pounds of steam per lb. of water removed | Kilowatt hr. per lb. of water removed | Heat-transfer efficiency (%) |
|---|---|---|---|---|---|
| Infrared slasher | 0.38 | 0.019 | --- | 0.48 | 60.0 |
| Steam-can slasher | 0.14 | 0.014 | 1.80 | --- | 61.5 |
| Tenter dryer, hot-air | 0.31 | 0.047 | 2.77 | --- | 45.9 |
| Stock dryer, hot-air | 0.24 | 0.025 | 3.23 | --- | 35.0 |

**TABLE 8. High-Frequency Dielectric-Heat Dryers**

| Item of cost | Drying after dyeing | |
|---|---|---|
| | Forced hot-air ($ per hr.) | HF dielectric ($ per hr.) |
| Equipment | 1.30 | 3.54 |
| Electric power | 1.12 | 1.78 |
| Steam | .21 | --- |
| Tube replacement | --- | .75 |
| Labor | .11 | .32 |
| Maintenance | .45 | .17 |
| Total | 3.19 | 6.46 |
| Drying cost (¢ per lb. water removed) | 1.20 | 2.40 |

# Studied by ITT

complete temperature control could improve present drying as much as 20%.

Tables given above summarize some of the important findings of the institute.

As used in the tables, heat-transfer efficiency is the ratio (in percentage) between the heat put into the dryer and the heat used up to evaporate water from the material.

Actual operating costs shown in Table 3 are influenced by cost of coal and power in different localities. These figures are standardized in Table 4 on the basis of a steam cost of 75¢ per 1,000 lb. of steam.

**CONTROLS.** Effect of temperature controls on the input and exhaust lines can be seen by comparing the performance of slashers A and B in Table 4. They had nearly equal heat-transfer efficiencies, but B evaporated 100 lb. of water at a cost of 14.9¢, while A evaporated the same amount of water for 16.3¢. Cotton or rayon and the number of ends in the warps have no influence on the amount of water evaporated.

The advantage of a good moist-air-removal system can be seen by a comparison of slashers A and D. D had an inclosed drying section; A was equipped with exhaust ducts over the cylinders and also over the size box.

Each yarn end in D touched only three cylinders, as in A. The warp sheet was split in half: part of it went over the first cylinder and by-passed the second; part of it by-passed the first cylinder and went over the second. Lack of a good moist-air-removal system cost A 5.2¢ per 100 lb. of water evaporated.

Hot-air dryers, Table 5, are more practicable than steam cylinders for drying such packages as raw stock, bobbins, cheeses, cones, skeins, and beams; but evaporating a pound of water with a hot-air dryer costs about 40% more than on cylinders.

*TO DRAW COMMUNITY RESIDENTS to Pepperell's open house, banners were hung and newspaper advertisements were run. Designation of "days" for special groups added flavor, helped control flow of crowds. Door prizes and other attractions were publicized to encourage attendance.*

COME ONE...COME ALL! EVERYBODY WELCOME!

# BIG OPEN HOUSE

## at PEPPERELL, in BIDDEFORD

## WEEK OF JUNE 14-17

*See* how one of the country's largest textile mills operates over 180 manufacturing operations during a personally guided tour of the plant.

*See* the interesting and intricate dacquard looms that weave attractive designs on crib blankets.

*See* the beauty of the Blanket Cloth room with its rainbow-hued effect.

*See* a variety of dress fabrics in production.

*See* an historical comparison of an old-time hand loom in action against one of the latest type looms used in the mill.

*See* a large number of interesting exhibits showing the many and varied uses of Pepperell fabrics.

*Schedule*

**MONDAY—JUNE 14**
Dedicated as RELATIVES OF PEPPERELL EMPLOYEES DAY

**TUESDAY—JUNE 15**
Dedicated as FRIENDS OF PEPPERELL EMPLOYEES DAY

**WEDNESDAY—JUNE 16**
Dedicated as BIDDEFORD AND SACO DAY

**THURSDAY—JUNE 17**
Dedicated as YORK COUNTY DAY

*Plan now to come on whatever day is most convenient for you*

4 WORTHWHILE DO
FREE SO
SESSION!
HOURS EACH D
*State safety laws p*
PEPPERELL M

**HIGHLIGHTS:** *Careful advance planning of many details is secret of successful affair—Control of traffic is most important function—Products displayed for employees as well as guests—Officials consider event successful and worth-while.*

*AS A BUFFER FOR LARGE CROWDS, displays of Pepperell products were placed in a hall through which guests entered mill. Chief attraction among displays was ensemble of ten bedrooms showing Pepperell products in use. Such displays showed employees and guests the size and scope of Pepperell operations and final products of local mill.*

*REGISTRATION OF GUESTS and assignment of guides were two of many details planned for well in advance. All operations were explained in sequence by guides and by placards on machines. Tour permitted employees to see and to learn of operations not seen in normal daily work.*

# *The Story Behind Pepperell's* OPEN HOUSE

*By* **MAURICE C. E. ROUX,** *Personnel Manager, Pepperell Mfg. Co., Biddeford, Me.*

A RECENT FOUR-DAY OPEN HOUSE run by Pepperell Mfg. Co., at its plant in Biddeford, Me., succeeded in attracting over 5,000 visitors. Included were employees; local citizens; many business, professional, and civic leaders; and several hundred out-of-town people.

How was it done? What was there in the Pepperell experience that other companies in the industry can use to advantage in planning similar events?

Reasons for the success of the event can be reduced to two words—advance planning. Items requiring careful advance planning, careful execution, and complete follow-through are: (1) stimulation of interest on the part of employees and community residents; (2) setting up of incentives for attendance, (3) control of traffic to prevent disruption of operations and to prevent accidents, (4) routing of guided tours and rehearsal of explanations of operations, so that no guest would miss main points of interest, and (5) organization of product displays for benefit of employees and guests.

**PLANNED WELL AHEAD.** Plans for the Biddeford open house were made about two months in advance. The objectives were: (1) to show the people of Biddeford and other nearby places how the Pepperell plant operates and to indicate its substantial importance, as a large employer, in the economic life of the community; (2) to make Pepperell employees more familiar with operations they saw little of in their daily work; and (3) to show both employees and community people the size, scope, and stability of the Pepperell business as a whole by various means, including dramatic displays of products from the four other Pepperell plants as well as products of the Biddeford mill.

Ten days before the tours began, invitations were mailed to all employees; to business and professional people in the community and nearby places; to the officers of civic, social, and fraternal organizations; and to a list of important municipal officials. In inviting public officials, care was taken that no political distinctions of any kind were made.

Publicity and promotion played a highly necessary role both in calling attention to the open house and in maintaining interest while it was going on. Three advertisements were inserted in local and Portland newspapers.

News releases were used in all the papers throughout the area; and, while the tours went on, press coverage gave a running account of the events day by day. Pepperell did not leave this job to the newspapers. Stories were prepared by the company's publicity counsel and released by mill officials.

In making the plans, it was necessary to devise a practical method for holding the tours without interruption of operations. This was done by having two sightseeing sessions, one from 2 to 4 p.m. and the other from 7 to 9 p.m. on each of four days. To add flavor to the festivities, each of the four days was dedicated to a special group. Monday was designated as "Relatives of Pepperell Employees Day;" Tuesday as "Friends of Pepperell Employees Day;" Wednesday was "Biddeford and Saco Day;" and Thursday, "York County Day."

**HANDLING TRAFFIC.** The problem of handling crowd traffic was one to which the Pepperell people gave a

(*Continued on page 208*)

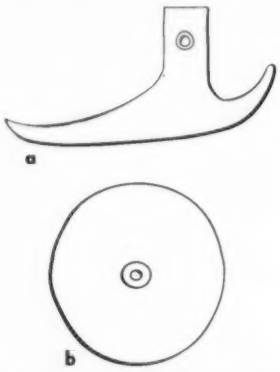



FIG. 1. CLOTH CAMS in general use are of two types: sled-runner pushdown **a** and cloth wheel **b**. They push the knitted cloth to the bottom of the needles and hold it there while a new stitch is formed. Both types of cams are efficient.

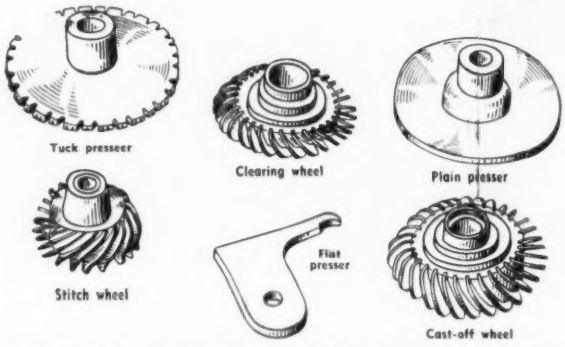



FIG. 2. FEED PARTS AND BURRS are well standardized, although parts are not interchangeable among knitting machines of different makes. The parts labeled here have counterparts in nearly all spring-needle machines.

# SPRING-NEEDLE Feed Parts Can Make or Break Quality

***HIGHLIGHTS:*** *Formation of spring-needle stitch is the basis of quality knitted fabric—A worn backing-wheel blade may cause a float; the float may cause a smash—Critical setting of stitch-wheel blades determines stitch length and affects cloth weight.*

**By ALBERT M. YOUNG, Jr.**

SPRING-NEEDLE stitch-wheel machine parts are fairly well standardized. Parts for machines of different manufacture, with the exception of pushdowns or cloth wheels, have only minor variations. Of course, feed parts are not interchangeable between machines of different makes, but the design, functions, settings, and wear points of different-make parts are similar. Thus, the settings and trouble remedies found to be successful on one machine are applicable to others.

The main difference between the two types of cloth cams in popular use is in the shape—one type being termed a "sled runner" and the other a "cloth wheel." Both are designed to push the cloth from the top to the bottom of the needles and keep it there, out of the way of the burrs engaged to form the new stitch. Both types of cams, Fig. 1, do this job efficiently.

The sled-runner pushdown setting is perhaps the least complicated of all feed-part settings. Running at an angle to the needle line, the space between pushdown and needles graduates from about $\frac{1}{2}$ in. at the heel end to about $\frac{1}{4}$ in. at the toe end. Just enough space is allowed between the bottom of the heel and the cylinder to permit the cloth to pass through. The toe rises to within $\frac{1}{8}$ in. of the needle tops.

Cloth-wheel cams are set in approximately the same way; but since the working arc of the wheel is fixed, the wheel is simply set to best advantage.

Other standard feed parts and burrs are shown in Fig. 2. In the following explanations of the functions of each part, the needle cylinder is assumed to be turning in a clockwise motion. Sled-runner-type pushdowns are used.

**BACKING WHEEL.** The first burr or wheel in the feed sequence is the backing (plush) wheel. The function of the backing wheel is to lay in the backing yarn in a fixed pattern. The pattern is set into the wheel by means of removable plugs, arranged in the spaces around the perimeter of the wheel to provide "floats" at proper intervals. The relative positions of the floats from all backing wheels around the cylinder make the backing pattern.

The backing wheel interlaces the yarn between the needles. In order to do this, the wheel works high on the outside of the needles, the yarn grooves in the blades carrying the yarn over the top and in back of the needles wherever there is an open space between blades. When a plug contacts a needle, it pushes the needle back beyond reach of the yarn groove in the blades. Thus, the yarn is placed in front of the needle. Yarn placed in this manner will be tied into the cloth by the next stitch. Yarn that has been carried to the back of the needles will form floats. The top

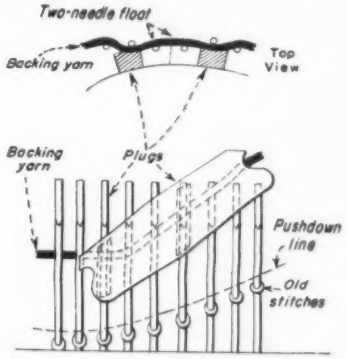



FIG. 3. BACKING-WHEEL FUNCTION is to lace the yarn between the needles. In the top view, the backing yarn is laced in front of one needle and behind two needles in a 2-and-1 pattern to form a one-needle knit and a two-needle float. Plugs, in the lower sketch, push every third needle back so that yarn can be placed in front of them.

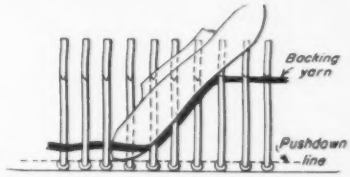
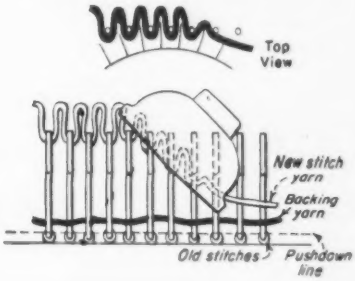



FIG. 4. CLEARING-WHEEL ACTION clears the backing yarn from the needles that will be engaged by the stitch wheel. Big, strong, and deep-set, this burr causes little trouble. Since it only wipes the yarn along the needles, it causes insignificant wear.

FIG. 5. THE STITCH WHEEL feeds yarn under the needle beards, draws enough yarn to form stitches, and helps control fabric weight. Correct setting must be made so that the wheel blades enter the needles at the proper point and raise to the proper height.



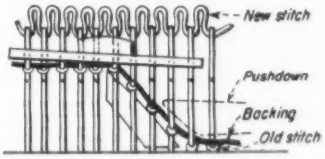




FIG. 6. THE LANDING WHEEL "lands" the formed stitches on the outside of the needle beards, while the presser closes the beard around the yarn that is to form new stitches. Presser pressure and landing-wheel height must be correct and coordinated for good stitch formation.

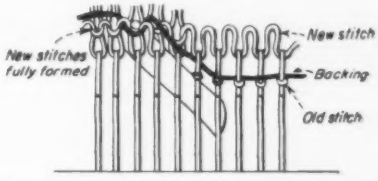



FIG. 7. THE CAST-OFF WHEEL completes the stitch by pushing the old stitch up and off the needle. Burrs on the wheel blades are common causes of fabric defects. They can be polished off easily.

view in Fig. 3 shows yarn being inserted in a typical 2-and-1 pattern.

To assure trouble-free running, backing wheels should be rebladed and new plugs inserted when signs of wear appear. Cotton and other soft yarns have little effect on the tempered steel blades. The abrasive action of hair yarns such as alpaca, mohair, camel's hair, etc. shorten the useful life considerably.

**BLADE FAULTS.** Two blade conditions usually result from yarn-friction wear:

1. The yarn groove is worn to excessive depth, leaving the remaining blade too short to lift the yarn over the needle tops. With this condition, the yarn is not interlaced but left to hang free, making long, dangerous floats that may become entangled with following burrs. The pattern, of course, is disrupted. Some fixers combat this condition temporarily by letting the wheels deeper into the needles. The practice is not recommended, for it hastens wear of plugs and needles, and may snap off the needles.

2. The second blade condition usually appears along with the first. In cutting the groove deeper, the yarn also shapes the upper part of the blade into a sharply pointed hook. During the downward motion of the blade, the hook may dig into and hold on to the yarn. Smashes may result. The quick repair in this instance is made by breaking the hooks off with pliers.

Backing-wheel plug trouble results from three main causes: (1) loose plugs may swing out and jam in the needles; (2) plugs of unequal depth in the same wheel may cause skips, the long plugs preventing the short ones from pressing the needles back far enough to allow the yarn to get in front of the needles; and (3) the needle grooves in the plugs may become too deep, causing the same results as plugs of unequal depth.

The best remedy for these and all other burr trouble is complete replacement of all worn blades.

**CLEARING WHEEL.** The clearing wheel, Fig. 4, second in the feed sequence along the line of yarn travel, also works from the outside of the needles.

This burr, large and sturdy and set far into the needles, usually does not cause much trouble. A cramped

(Continued on page 232)

*WASTE-REDUCTION INCENTIVES can supplement production incentives in cotton mills, according to standards engineers.*

# SPINNERS' STANDARDS Don't Go Far Enough

***HIGHLIGHTS:*** *Work-load standard can be varied to provide simple piece rate and flexible unit-system measure—Waste standard and incentive offer for waste reduction are possible when vacuum removes ends-down waste—Better control of manufacturing variables leads to wider usefulness of standards engineer.*

**By C. MALLARD BOWDEN**
*Southern Editor, TEXTILE WORLD*

WITH THE BETTER CONTROL of manufacturing details that has come with technological progress, the standards engineer can now offer the spinner — and other operators — a standard that will provide for all variables more closely than heretofore. He can also offer her a wider variety of incentives to further effort and profit in related matters, such as waste control and quality.

Details of a new proposal in applying standards to the spinner's job are shown in the forms on the next page. This proposal is under study by two yarn mills as a result of waste-control work undertaken by the standards department.

With a system of vacuum removal of ends-down waste now installed, the standard engineers believe that waste standards and possibly incentives are feasible. Such incentives are not considered by management in these mills as capable of replacing the present production incentive, but the method of analysis may offer a partial replacement or supplement. The suggestions are particularly applicable in combed-cotton, the American-worsted, or other premium-stock mills which need a differential bonus system to implement production incentives and to assist in the control of waste.

The forms on the next page show:

1. An improved method of applying a work-load standard and piece rate.
2. Basic data of a waste standard and incentive.
3. The spinner's weekly tally of both types of pay.

The work load and standard piece rate, illustrated by Form 1, are not radically different from the common method of setting up the spinner's job by time study for determining piece rate. The illustration is stripped of the mass of detailed data usually shown on the standard card.

**EASY TO EXPLAIN.** With simplified data, the mill can better explain standards to the spinner. In fact, a copy of the form can be given her. The list of job elements or operations contains standard times. It is not difficult to show the spinner that the standard gives her 0.22 min., or approximately 1/5 of a min., to piece up an end, and 0.46 min. to repair a creel break and piece up the end simultaneously. She realizes that she can piece up more ends per minute than the standard calls for and that the standard, therefore, has an extra allowance to provide for necessary spare time for personal needs.

It is much easier to explain the system of allowances that the standards department has set up for a job after the card has been shown the spinner. For the work involved in piecing up an end, she is allowed a 20% increase over the average time taken for the piece up, in contrast to the 10% allowed above the actual patrolling or walking time of the job. No allowance percentage used by one mill is less than 10%, and the highest for especially difficult labor is set at 40%.

The time standard has one other modification. It and the weekly pay tally sheet, Form 3, present the wage incentive on a piece-rate basis that is easily understood by the spinner, but they also retain the basic time data for labor-cost control.

In other words, the mill uses a piece-rate method of payment to spinners and unit-system basic data. The latter information is essential if the mill intends to set up "percentage-performance" ratings for indirect labor, departments, and mill-units. If, for example, all spinners had a weekly percentage performance of 138% (as shown for Jenny Spinner in Form 3), the combined performance would have earned supervision a 38% bonus in this mill, unless supervision had en-

countered, as it frequently does, some penalty factors that reduced the performance rating for the department.

**WASTE BONUS.** The limitations of a waste incentive indicate that in most mills it should be used as a special bonus to put some drive behind waste control. Its basic information also is a direct check upon that plague of spinner's standards, variations in ends-down. In this respect, it also offers the spinner a share in the savings from reduced white waste. The data included in Form 2 are not representative of the maximum possible gains from waste-control plans which would, of course, vary with every mill. Conservative figures were selected for illustrative purposes only.

Two methods of calculating the savings are suggested: the spinning cost-over-cotton method as a minimum that will stake out approximately the share of the fund that goes to the spinning room; the cotton plus cost-over-cotton method for a reasonably accurate gross savings. However, the method of computing the savings is one for the cost department and the standards engineer to work out.

A waste incentive cannot be applied in every mill. When waste is handled and disposed of personally by the spinner, an incentive would in effect be a premium upon "invisible" loss of stock. The spinners would find waste more valuable if it did not reach the waste can. It is almost indispensable to have a mechanical system of waste removal in order to use such an incentive, although the waste-standard method itself can be used with profit by any mill.

In any event, different standards of scavenger-roll waste may be required for different numbers of the same stock because of differences in twist, speed, and draft. When such differences are nominal, they may be disregarded; and the total savings for all numbers on a given stock may be computed for and shared by all the spinners working on that stock.

The effect of the special bonus, however, should not be minimized. If it is distributed as a part of a genuine waste-control plan, it may put new impetus behind Jenny Spinner's energy in keeping those ends up. It can support the regular production incentive. In the long run, it may surpass any amount of formal training in waste "education" or supervisory cajolery to "keep the waste down."

Application of this system may help the standing argument between standards engineers on the practicability of some types of standards and incen-

(Continued on page 204)

**Form 1** **Work-Load Standard and Piece Rate**

Count: 20s Multiplier: 4.50 Ring Dia.: 2 1/4 in.

| Job element | Time per occurence | Time per side hank | No. per side hank | Piece rate at 70 ¢/hr. |
|---|---|---|---|---|
| 1. Piece up end below rolls | 0.22 min. | 7.2 | 1.58 min. | |
| 2. Piece up end above and below rolls | 0.46 min. | 0.7 | 0.32 min. | |
| 3. Creel | 0.23 min. | 6.5 | 1.50 min. | |
| 4. Patrol sides | 2.73 min. in 30 side banks | | 0.91 min. | |
| 5. Remove laps from rolls | 0.22 | 0.1 | 0.02 min. | |
| 6. Miscellaneous | 21.37 min. in 30 side banks | | 1.71 min. | |
| 7. Cleaning | 165.75 min. in 110.5 side banks | | 1.50 min. | |
| | | TOTAL | 6.54 min. | |

6.54 min. X 70¢ (Base Rate) ÷ 60 = $0.076 per side hank

**Form 2** **Waste Standard and Incentive**

Spinning, No. 4 Mill

| Stock | Scavenger-roll waste month ending 1-31-49 lb. | Spinning production lb. | Waste % standard | Waste % actual | Savings % and dollars | Number employees | Dollars distributed to employees |
|---|---|---|---|---|---|---|---|
| Eclat | 42,000 | 1,050,000 | 4.4 | 4.0 | 9 (a) 2,100.00 (b) 700.00 | 49 | 343 |
| Salk | 4,352 | 128,000 | 3.4 | 3.4 | 0 | 9 | |
| Cusher | 2,052 | 102,600 | 2.5 | 2.0 | 20 (a) 59.10 (b) 46.17 | 7 | 49.00 |

(a) Cost plus cost-over-cotton (minus overhead) basis.
(b) Spinning cost-over-cotton basis only.

**Form 3** **Weekly Pay Tally**

For week ending Feb. 5, 1949

Name Jenny Spinner

Dept. Spinning, No. 4 Job 20s Job No. 627

| Day | Production | Rate | Pay |
|---|---|---|---|
| Monday | 101.4 | $0.076 | $7.71 |
| Tuesday | 103.0 | | 7.83 |
| Wednesday | 102.1 | | 7.76 |
| Thursday | 100.2 | | 7.62 |
| Friday | 101.8 | | 7.74 |
| Saturday | | | |

% of Performance* 138% Weekly total 38.66

Special: Bonus for waste control 7.00

TOTAL 45.66

*Used to obtain departmental % efficiency, 100% being standard for a job.

*RECONDITIONING in this weave room included new 40-in. and 48-in. X-2 Draper looms, an air-changing system, new paint job for walls and ceiling, daylight hammered window panes, and treated floors.*

# Modernized WEAVE ROOM Gets Good Efficiency

***HIGHLIGHTS:*** *New 40-in. and 48-in. X-2 Draper looms installed at Columbus Mfg. Co.—Daylight hammered window panes stop heat and glare—Relative humidity maintained close to 87% by air-changing system.*

**By P. M. THOMAS**
*Associate Editor, TEXTILE WORLD*

ABOUT A YEAR AGO, Columbus Mfg. Co., Columbus, Ga., completely reconditioned one of its weave rooms. The reconditioning job included replacing old looms, treating the floor, replacing the windows, painting the walls and ceiling, and installing an air-changing system.

Before the room was changed, it contained 332 E-Model Draper looms —214 of them 52-in. and 118 of them 60-in. looms. These were replaced by 114 40-in. and 162 48-in. X-2 Draper looms—a total of 276.

The cloth woven at present on the 40-in. looms is industrial sheeting woven with 21s warps and 25s filling. These looms operate at a speed of 192 ppm.

The cloth woven on the 48-in. looms is industrial sheeting, woven with 30s warp and 43s filling. They run at 172 ppm.

As the looms were installed, floors in the warp alleys and weavers' alleys were sanded off and sealed by the Tennant system. Cleaning of floors since that time consists, besides routine mopping every 4 hr. with a dry mop, of a weekly mopping and a buffing and resealing every 3 to 4 months.

Under each loom the floor was painted with oil-resistant paint, which penetrates oil already on the floor and bonds itself to the wooden flooring. Neither the old nor new oil will soften the paint film. The painted area makes cleaning the floor under the loom considerably easier.

**HEAT AND GLARE.** The weave room lies lengthwise east and west. Formerly, it was necessary to keep curtains over the south windows in the summer time to stop the glare of light through the windows and lessen the heat from the sun.

All the windows on the south side of the room were replaced with heat- and glare-resistant, hammered-glass panes. Sunlight falling on the windows now is diffused, eliminating glare and all but eliminating heat.

The Bahnson air-changing system has four ducts on each side of the room, extending from the wall to the

center of the room. The room dimensions are: length, 185 ft.; width, 122 ft.; height, 15 ft. The air content of the room is 338,550 cu. ft. A complete change of air is obtained about every 3¼ min.

Average relative humidity obtained in the room is 87%. Frequent checks are made daily at different points of the room at different hours. Typical variation of humidity conditions is shown in this daily check:

| | | |
|---|---|---|
| 9 a.m. | — | 88 % |
| 10 | — | 86 |
| 11 | — | 86 |
| 1 p.m. | — | 87 |
| 2:30 | — | 85 |
| 3:30 | — | 88 |

The drop in humidity at about 2:30 p.m. occurs every day. It is caused by the opening of doors in the room as the second-shift workers begin to come in for their shift. The air pressure in the room drops, lowering the humidity 2 or 3%. After the first-shift workers leave at 3 p.m. and the doors are kept closed for a while, the pressure and humidity build up again.

**BETTER START-UP.** Better-conditioned warps are ready after a shut-down period as a result of week-end-humidity controls on the air-changing system. Without changing the normal humidity controls, the control system can be switched over to lower humidity conditions during the shutdown.

The advantage of controlled humidity during such periods was seen after a four-day shut-down for Christmas. When the mill started up again, the weaving efficiency in the room equipped with air changing dropped only about 1%. The efficiency drop in weave rooms not equipped with air changing was 3 to 4%.

One disadvantage reported for the system is the increased cleaning necessary. Of course, the eight ducts have to be cleaned; they are added equipment and add to the cleaning job. But overhead cleaning is also increased. The flow of conditioned air throughout the room (along the ceiling as well as along the floor) causes lint to tag worse on the ceiling and the fixtures suspended from it. More blowing with compressed air and more brushing are required to remove the lint tags and dust.

In winter, recirculated air is heated by being drawn through heaters into the inside intake ports. These heaters were formerly equipped with fans and used as unit heaters at various parts of the room.

Ordinarily, it is much easier to run E-Model looms, even old ones, at a good rate of efficiency than it is high-speed X-Model looms. The E's are

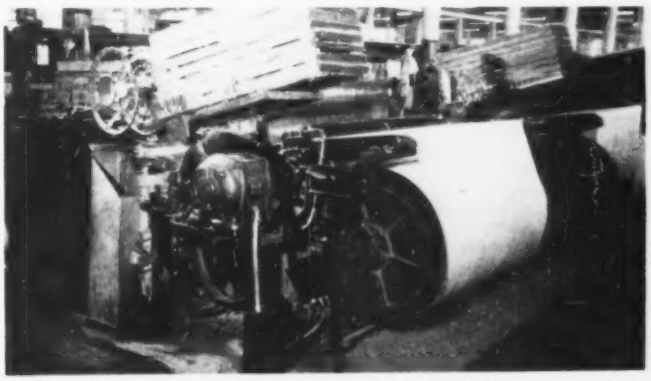
*THE 40-IN. LOOMS run at 192 ppm. Cloth is industrial sheeting. Windows in background are glazed with heat- and glare-resistant hammered glass.*

wider, run slower, and are all-around easier to handle.

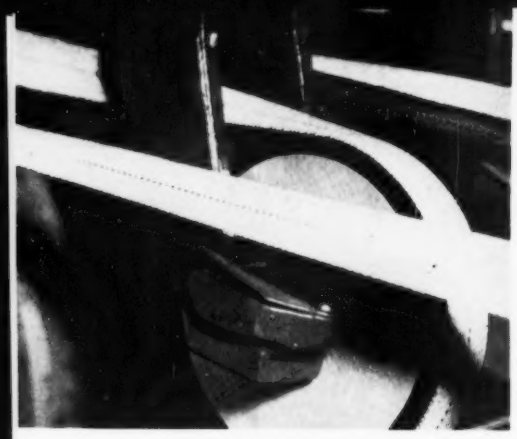
However, good efficiency on the new X-2's is being obtained at Columbus Mfg. Co., particularly since the air-changing system was installed.

The looms were started up and run a number of weeks for "breaking in." No efficiency figures were worked up during this period. The looms were then run 5 months, with the efficiency being checked, before the air-changing system was installed. Since then, they have been running 4 months.

The average first-shift efficiency for the last 4 months prior to the installation of air changing was 87.6%. The average for the same shift during the first 4 months after air changing had been installed was 93.12%.



*WARP BEAMS have 26-in. heads. On this 40-in. loom, the beam holds approximately 2,400 ends of 21s warp, 3,000 yd. per beam. On 48-in. looms, the beams have about 1,920 ends of 30s warp, 5,000 yd. per beam. The paint under the loom is oil resistant.*



# PROPER TAPE

## Points Way to Power Savings

***HIGHLIGHTS:*** *Width, weave, thickness are among important factors—33% of power consumed by spindles and tape; 7 to 12% can be saved —Some tapes increase spindle speed 200 to 250 rpm.—Tape joint consumes power.*

**By RICHARD S. CROWSLEY**

IT IS AN ACCEPTED FACT today that any new spinning frame should be equipped with a tape drive for the spindles. It is generally recognized that a tape drive is superior to a band drive. Brief study of the factors which are affected by the type of drive for the spindle will support very clearly the statement, or claim, that the development of the tape drive was one of the most important improvements on the ring spinning frame.

Although the tape-drive assembly has been accepted, unfortunately there has been a tendency for many mill technicians to adopt the attitude that any tape will serve the purpose as well as the next. This lax attention should not be tolerated any more than if a similar lack of attention was given in choosing the top-roll covering.

There are different types of tape developed for different conditions, just as there are certain roll coverings designed for more or less specific purposes.

The tape is usually classed as an operating supply with the selection and purchase dependent upon the purchasing department of the mill which may not give the product the attention it deserves but instead may base the procurement chiefly on a competitive-price basis.

Tape procurement is strictly a maintenance problem and must be done at regular intervals in order to keep a sufficient supply on hand at all times. For the importance of the duties performed by tape, the yearly expenditure is extremely small.

The durability and life of spinning tape naturally varies according to spindle speed as well as to hours run, condition of the spinning cylinder, type and design of tension pulley, and weight of the bobbin and full package.

The average life of a tape used in a normal mill spinning medium counts should be at least 4,000 hr. for a ¾-in. tape. Using this time as a basis, a 50,000-spindle mill running on medium counts of yarn 80 hr. per week will require the expenditure of approximately 868 lb. of tape per year. The purchase of tape is, therefore, not a large item in yearly maintenance and is certainly not large enough to necessitate cutting expenses by choosing the lowest-priced tape available.

### Tape Drive Predominates

**The driving of spinning and twisting spindles by means of tape was developed in this country about 1910, and from that date onward an increasing percentage of the new frames manufactured were built to incorporate the tape drive. A survey taken in 1945 showed that of approximately 23,000,000 cotton spindles in existence in the United States, 15,000,000 were equipped with tape drives and the balance with band drives.**

In the spinning of yarn on a ring spinning frame, there are three separate and distinct functions: namely, drafting, twisting, and winding. Of these three operations, the tape is vitally concerned with two: twisting and winding. The successful performance of two-thirds of the spinning-frame operation is dependent upon the proper functioning of the tape.

Until a few years ago, only a few of the more aggressive and well-managed mills had brought the study of tape to the attention of their technical departments. It still is not uncommon to find that a mill has ignored probing into the correct selection of spinning tape.

**TAPE WIDTH.** The majority of tape consumed today in this country is ¾ in. wide. There is also a considerable quantity of ¾-in. tape used for frames which have very large rings and which are spinning coarser counts on large packages. The exact break between the use of ¾-in. tape and wider is difficult to establish as a general rule, beyond the fact that yarns heavier than 20s may be spun on rings over 2½-in. in diameter and on frames set up for a traverse longer than 8½ in. For frames intended for such coarse work, it is usually necessary to use strong tape, with the extra strength obtained through wider width. The thickness of the tape cannot be increased to attain the extra strength for reasons of flexibility and driving efficiency.

Sample tapes were recently tested for the weight, yards per pound, thickness, and breaking strength. The samples were taken from several of the leading tape manufacturers, and findings are given in Table I.

It was the opinion of the tech-

**Table I. Physical Properties of Tapes**

| Tape No. | Weave | Width (In.) | Thickness (In.) | Yd./Lb. | Lb. Break |
|---|---|---|---|---|---|
| 1 | Herringbone | 5/8 | 0.057 | 40.5 | 263 |
| 2 | Basket | 5/8 | 0.063 | 31.2 | 281 |
| 3 | Herringbone | 5/8 | 0.054 | 40.6 | 202 |
| 4 | Basket | 5/8 | 0.077 | 32.5 | 248 |
| 5 | Basket | 5/8 | 0.035 | 62.3 | 268.5 |
| 6 | Basket | 5/8 | 0.046 | 46.2 | 221 |
| 7 | Basket | 5/8 | 0.064 | 29.1 | 279.5 |
| 8 | Herringbone | 5/8 | 0.048 | 41.3 | 253 |
| 9 | Herringbone | 5/8 | 0.044 | 50.7 | 218 |
| 10 | Basket | 5/8 | 0.077 | 24.3 | * |

* Sample No. 10 does not show a breaking strength as it exceeded the limit of the breaking instruments in the laboratory.

**Table II. Whorl-Tape Factors**

| Diameter of Whorl (In.) | Regular Tape | Thin Tape |
|---|---|---|
| 15/16 | 10.14 | 10.45 |
| 1 | 9.50 | 9.80 |
| 1 1/16 | 8.94 | 9.22 |
| 1 1/8 | 8.45 | 8.71 |
| 1 3/16 | 8.06 | 8.25 |
| 1 1/4 | 7.60 | 7.84 |
| 1 5/16 | 7.24 | 7.47 |
| 1 3/8 | 6.91 | 7.13 |
| 1 1/2 | 6.34 | 6.53 |
| 1 5/8 | 5.84 | 6.03 |

For a 10-in. cylinder, figures in two columns at right can be multiplied by the speed of the cylinder to give spindle speed.

nicians making the tests that samples 2, 4, 7, and 10 are too heavy to obtain the best results in spinning. It should be noted that all of these samples are over 0.060 in. in thickness.

The average tape ⅝ in. in width usually has a weight equivalent of 43 to 48 yd. per lb. with a thickness of 0.048 to 0.055 in. and a breaking strength of 202 to 280 lb., with the average around 240 lb.

The perfect spinning tape should be as light, thin, flexible, uniform, and strong as possible, and should have a minimum amount of stretch.

It has been the general opinion that the type of weave was strictly a matter of personal preference and that one type of weave did not present any advantages over another. It has definitely been proved that either the basket weave or the herringbone weave is completely satisfactory. The only exception to this is in the construction of a particular tape manufactured for use on heavy twisters. This tape has a special warp to prevent stretch and must be made in the basket weave, as it cannot be incorporated into a herringbone-style weave.

Although it has been stated that either weave is as satisfactory as the other, the performance of the two may not always coincide. A group of engineers were testing tape tension with respect to spindle speed and, in the course of their research, discovered a curious fact. It was found that the spindle speeds were decidedly above the calculated speeds. All instruments were recalibrated, checked, and found to be accurate.

Further tests confirmed the initial readings. It was then discovered that the spindles driven by the tape having a herringbone weave were going at a higher speed than those driven by tape having a basket weave.

It was finally discovered that the increase in speed was due to the fact that the herringbone tape, when under high tension, ballooned out or puckered out in the middle, so that the tape edges were driving on the smaller diameter of the crowned whorls.

**THICKNESS.** The thickness of the tape is one of the most important considerations in determining its use on spinning frames. The thickness of the tape has a direct influence on the flexibility or ability to wrap closely around the whorl of the spindle.

Slippage of the tape as it drove the loaded spindle was a cause for concern among tape manufacturers for many years; for if the tape slips as the package becomes heavier, the reduced speed of the spindle will result in yarn that is defective since it will have less twist than is needed. By using a very thin tape with an average thickness of 0.035 in., the flexibility is increased so that the tape grips the whorl over a larger arc of the tape and reducing the slip factor to produce an estimated tape-driving efficiency of 98%.

There are now available to the industry two standard tapes, one having the regular thickness of wall and the other designated as thin tape. Table II compares the ratio between the cylinder and whorls using both the regular tape and the thin tape. The cylinder is, in all cases, 10 in. in diameter. The ratio figure is a factor which, when multiplied by the speed of the cylinder, will calculate the speed of the spindle.

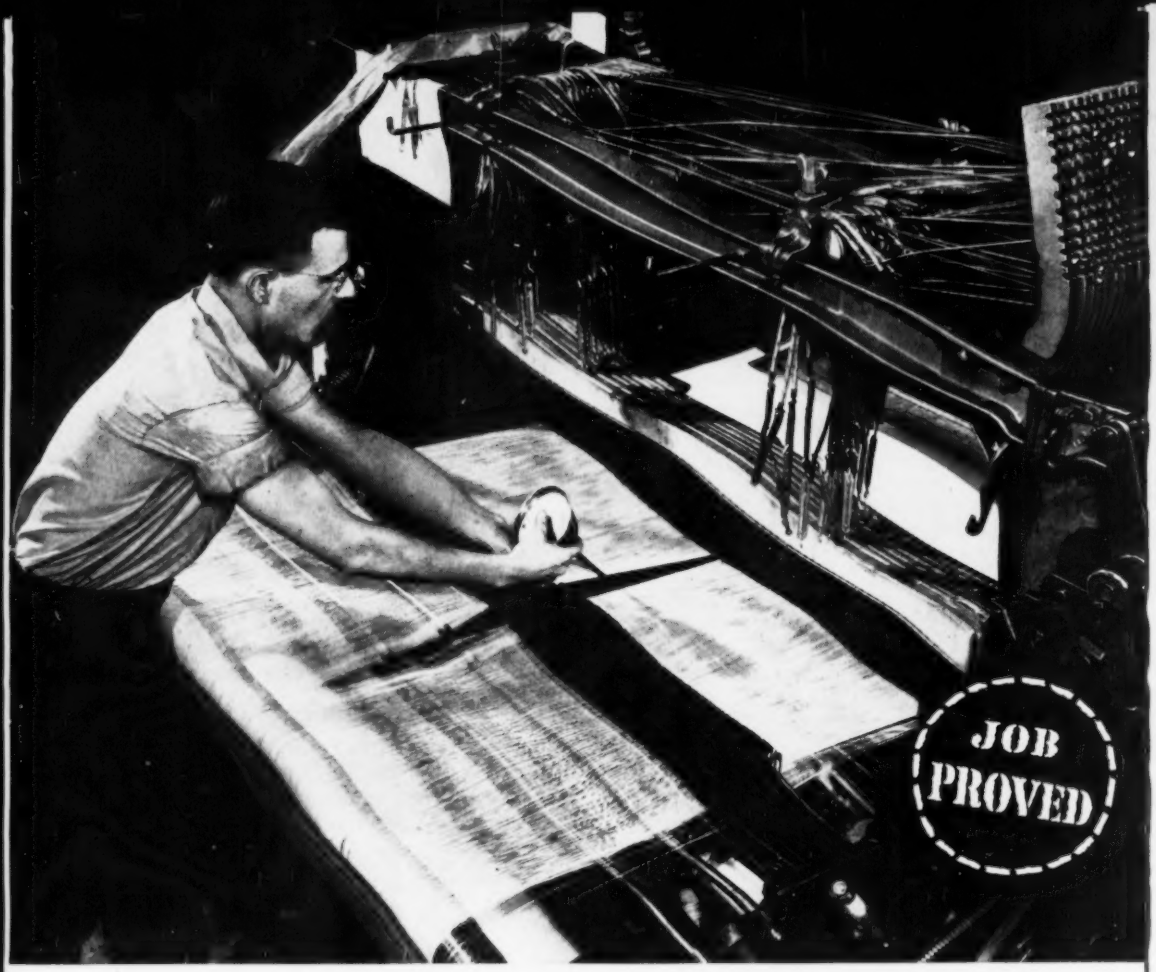
A close study of the figures, together with other data, has shown that there exists a great and close relationship between the types of spinning tape used and the speed of the spindles. By study and analysis, it has been found that certain types of tape will drive at a more even speed than others, all other conditions being equal.

It has been further proved that certain tapes on the market will cause a decided increase in spindle speed. This increase may be as high as 200 to 250 rpm. on a calculated normal of 9,000 rpm. spindle speed. The increase is in direct relation to pliability and thinness of the tape as it results from less slippage on both the whorl and the cylinder. The tape is also lighter and produces a higher speed, as it places less load on the driving motor, causing improved motor efficiency and a slight speeding up of the motor and all of the elements driven by it.

The importance of this load reduction should not be minimized, for extremely accurate and comprehensive tests inquiring into the power consumption of a spinning frame have shown that fully 33% of the total horsepower required to operate the average spinning frame is used to drive the spindles and tapes.

(Continued on page 214)

*A STROBOSCOPE, indispensable in a well-managed spinning mill, is useful in testing tapes.*




# STOPS THE SPLATTER—ONCE AND FOR ALL

## Suntac Oil Also Reduces Downtime, Protects Bearings and Cuts Oil Costs in Half

A mill scheduled to work 24 hours a day had to shut down twice a week to lubricate its 221 looms because the oil seeped out. Bearing failures were a continual threat. Furthermore, the oil splattered on the fabrics, with costly and troublesome results.

Two years ago, at the suggestion of a Sun Engineer, the mill changed to Suntac, an oil "Job Proved" in the textile industry. A marked difference was noted at once. The oil stayed in the bearings, protecting them—and stayed *off the cloth*. Downtime was cut in half, thus increasing production. With the splattering stopped, half as much oil was used—a substantial saving with so many looms.

Here is a case of a Sun Oil raising output, reducing maintenance and protecting machinery at the same time—even improving the quality of the product. This is typical of "Job Proved" Sun Oils the length and breadth of industry. What they are doing to make operations more profitable for others they can do for you. To get complete information about Sun textile lubricants and processing oils, call or write the nearest Sun Office.

**SUN OIL COMPANY • *Philadelphia 3, Pa.***
*In Canada:* Sun Oil Company, Ltd.
Toronto and Montreal

**SUN PETROLEUM PRODUCTS** SUNOCO
**"JOB PROVED" IN EVERY INDUSTRY**

## MACHINES NEEDED FOR TRICOT FINISHING

| | |
|---|---|
| **Pin Frame (75-ft. recommended)** | **Centrifugal extractor** |
| **Presetting machine for acetate** | **Wide padder (for resins)** |
| **Presetting machine for nylon** | **Detacker** |
| **Two tacking machines** | **Detwister** |
| **Eight to ten dyeboxes** | **Cloth opener** |

*PRODUCTION POSSIBLE centers around the pin frame; equipment cost will be in excess of $100,000.*

# Flux and Change Keynote TRICOT-FINISHING Methods

***HIGHLIGHTS:*** *Tacking edges and treating fabric as tube may give way to open-width treatment—Plant setup centers around pin-frame—Beyond machinery, there is plant location, construction, and personnel to consider.*

**By IRVING TEPLITZ**
*Richard Finishing Co., Inc.*

THE FIELD of dyeing and finishing rayon, acetate, and nylon tricot cloths is in a state of flux and change, due to the recent great rise of activity in flat-knit fabric manufacture. This branch is probably expanding faster percentagewise than any other division of textiles. Tricot cloth can be fabricated at low cost and at high speed. It has found a definite place as a lingerie and underwear fabric, not to mention its unexplored applications to many other uses. Tricot knitting is a field into which weavers have expanded, and tricot dyeing and finishing is a field into which woven-goods dyers and finishers have moved. The latter business is so new that no one seems to have positive ideas about it, and at best one can just outline or indicate a trend.

Tricot fabrics are knitted at widths which would be startling to the weaver: 168-in. width is standard. (Lace fabrics are knitted at widths over 200 in.) Handling cloths of such wide widths sets up problems for the dyehouse, where most fabrics usually run about 40 in., with some sheetings running up to 100 in.

Originally, the selvages of tricot cloth were sewn together, and the goods processed as tubular cloth; after the cloth had been dried, it was finished on a circular finishing calender by use of the spreader. The spreader had a razor blade at each edge; and, as the fabric tube was processed, it was cut into two fabrics. By processing the goods in this manner, they were dried in a relaxed state; but it was found that a preferable method of drying was on a pin-tenter frame. Although the goods are handled as tubular until they reach the pin-tenter frame, at that point they are handled as a flat fabric. In preparing the goods for the pin tenter, it is preferable that they be tacked at the edges rather than sewn together, as tacking is more easily removed.

Most recently, American Viscose Corp. has evolved a method of handling acetate tricot fabric throughout the dyehouse as a flat fabric without the need of tacking edges. The fabric is run full width through boiling water in relaxed state between two endless revolving blankets. This method is so new that it is not yet widely practiced.

The reason for sewing the edges or tacking the edges of tricot cloth was two-fold: (1) the tendency of the edges to curl was minimized; and (2) more important, this was the way to handle the cloth when pretreating acetate to avoid crow's feet and crack marks. The American Viscose Corp. method of pretreating cloth widths of 70-in. seems adaptable to full-width cloths, thus revolutionizing finishing methods.

The saving in labor cost by eliminating the tacking operation, and later the detacking operation, is of prime importance. However, as yet, some tacking and detacking will be necessary for nylon-tricot finishing.

**THE PLANT SETUP.** The tricot-finishing plant setup as of today is as follows:

1. Preparation of cloth for dyehouse.
   A. Tacking.
   B. Sewing pieces together end-to-end for continuous dyeing (optional).
2. Presetting of acetate fabric, which is run through quetsch-like machine containing warm water and a synthetic detergent, followed by cold-water bath.
3. Scouring and dyeing in dyeboxes, followed by finishing rinses in dyebox.
4. Centrifugal extracting.
5. Elimination of tacking, twisting of fabric (which occurs during dyeing); opening of fabric so that it may be put on pin frame in flat open form; use of detacker, detwister, and cloth opener.
6. Drying of fabric on pin frame —at end of frame are adjustable rotating knives which cut the cloth into desired widths; or cloth is taken off pin frame and folded into double width.

Nylon cloth is preset by one of three methods which may involve one

( Continued on page 228)

# How to modernize a machine with your BARE HANDS

The FAFNIR Wide Inner Ring Ball Bearing with self-locking collar.

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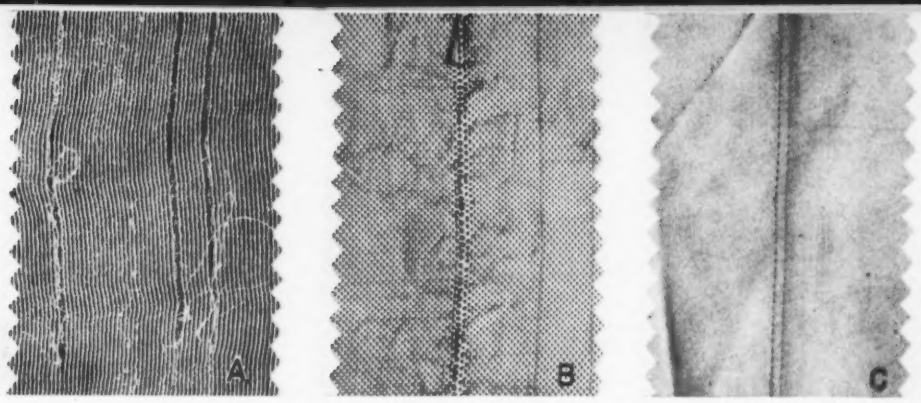



*CENTER DEFECTS are caused by faulty working of center filling fork. A. Marquisette: warp ends broken by filling fork. B. Tabby: floating ends back of reed. (Dark streaks are oily yarn where the ends were repaired; dirty smudges were made by the weaver when she repaired the floats.) C. Satin: broken end repaired. (Dirty yarn extended several yards.)*

# Many Seconds Caused by CENTER-FORK SMASHES

***HIGHLIGHTS:*** *Center filling feeler reduces filling defects but has created a new type of defect—Small center smashes may be caused by faulty setting of feeler—"Nuisance" nature of defect makes it more costly.*

**By ALBERT FRANTZ**

ONE OF THE WEAVING DEFECTS that occurs at the cloth center is that of small smashes due to the filling center-fork wires cutting or chafing warp yarn. Although they are small, these smashes can be troublesome and costly. Only a few ends may chafe at the fork wires, or several ends may break and stop the loom. If the loom is not stopped and the weaver is not required to spend time tying in the broken ends, the piece off the loom will certainly show defects during its trip through the inspection room.

If the small smashes cause broken ends and small holes every few yards, the cloth usually must be listed as a second. When only one or two ends repeat every few yards, a tied-in end may cause a hang knot as the knot weaves through the reed. This is an odd defect, but it will cause the goods to be classed as substandard. At other times, warp yarn soiled by oil and perspiration while an end is being tied in will cause a second, or a piece classified for dyeing in dark shades only.

Center-fork motions have proved their value. They have not, however, eliminated substandard merchandise. They have lessened filling-wise defects, such as broken picks, double picks, mispicks due to broken filling, cracks, etc. They have increased the chances for rough cloth, edge loops, and holes through the center of the woven cloth. They have caused two entirely new forms of defects: namely, the center loop and the center "bust-out."

**CAUSES OF SMASHES.** Frequent causes of small center-fork smashes are low

(Continued on page 190)

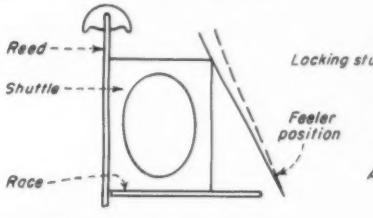



*FIG. 1. FILLING FEELER in the position shown by the solid line is set too low; it is in contact with the shuttle. In this position, it will cause center-fork smashes. Dotted line indicates the proper clearance.*

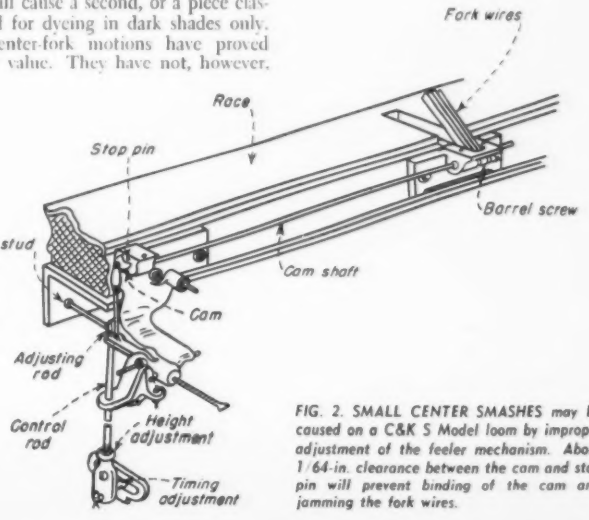
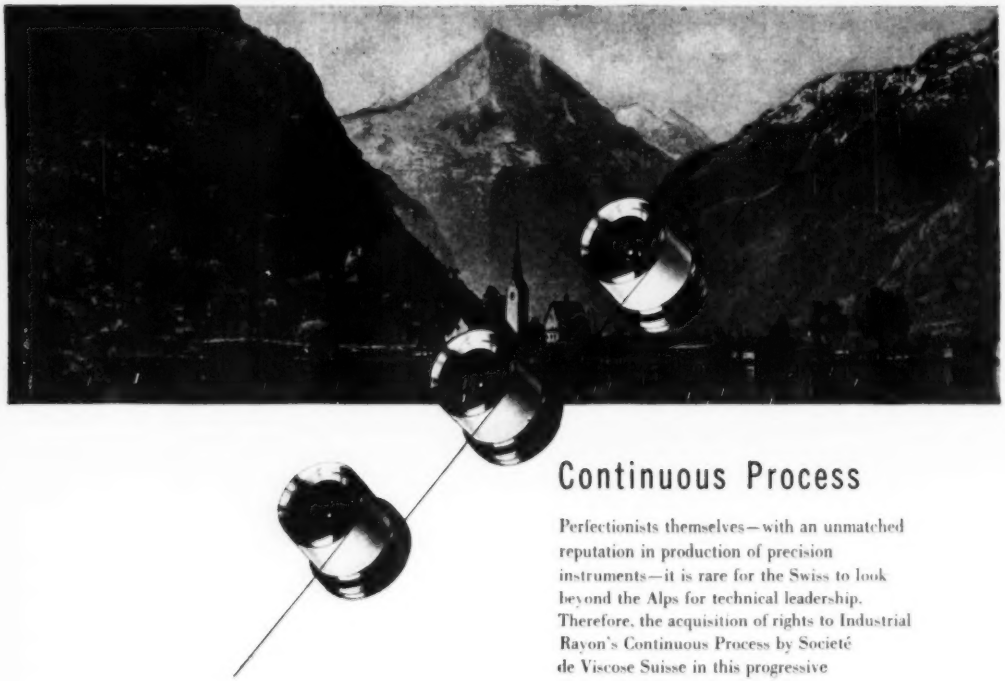



*FIG. 2. SMALL CENTER SMASHES may be caused on a C&K S Model loom by improper adjustment of the feeler mechanism. About 1/64-in. clearance between the cam and stop pin will prevent binding of the cam and jamming the fork wires.*

# SWITZERLAND welcomes another perfectionist . . .



## Continuous Process

Perfectionists themselves—with an unmatched reputation in production of precision instruments—it is rare for the Swiss to look beyond the Alps for technical leadership. Therefore, the acquisition of rights to Industrial Rayon's Continuous Process by Societé de Viscose Suisse in this progressive country is an exceptional tribute.

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*LONG-DRAFT ROVING can eliminate processes and improve quality.*

**TABLE I—Causes of Uneven Roving, Uneven Tension, and Imperfections**

| |
|---|
| ***Causes of Uneven Roving*** |
| *Blunt ends on skewers* |
| *Choked roving trumpets* |
| *Rolls not aligned straight* |
| *Loose couplings on spindles or bobbin shafts* |
| *Roller laps on back or middle roll* |
| *Vibrating spindles* |
| *Dry top rolls* |
| *Excessive front-roll speed* |
| *Lost motion in gearing* |
| *Out-of-balance flyers* |
| *Frames running tight* |
| *Eccentric rolls, or rolls with loose necks* |
| *Poor mixture or opening of stock* |
| ***Causes of Uneven Tension*** |
| *Light or heavy drawing or roving* |
| *Grooved top rolls* |
| *Cone belt slipping or shipper binding* |
| *Difference in lay gears or bobbin sizes* |
| *Ends twice around presser* |
| *Machine out-of-line or unlevel* |
| *Worn gears or studs in compound* |
| *Carriage binding* |
| ***Causes of Bunches and Slugs*** |
| *Cleaning or picking clearers while running* |
| *Blowing off machines or brushing ceiling and pipes* |
| *Dirty creel tops and roving cans* |

# Your ROVING Defines Card-Room Quality

***HIGHLIGHTS:*** *Good preparation of drawing sliver necessary for satisfactory extension of long-draft roving to premium stock—Straight-edge and ring gages set roll tolerances for good drafting—Tension, taper, and twist have precise requirements.*

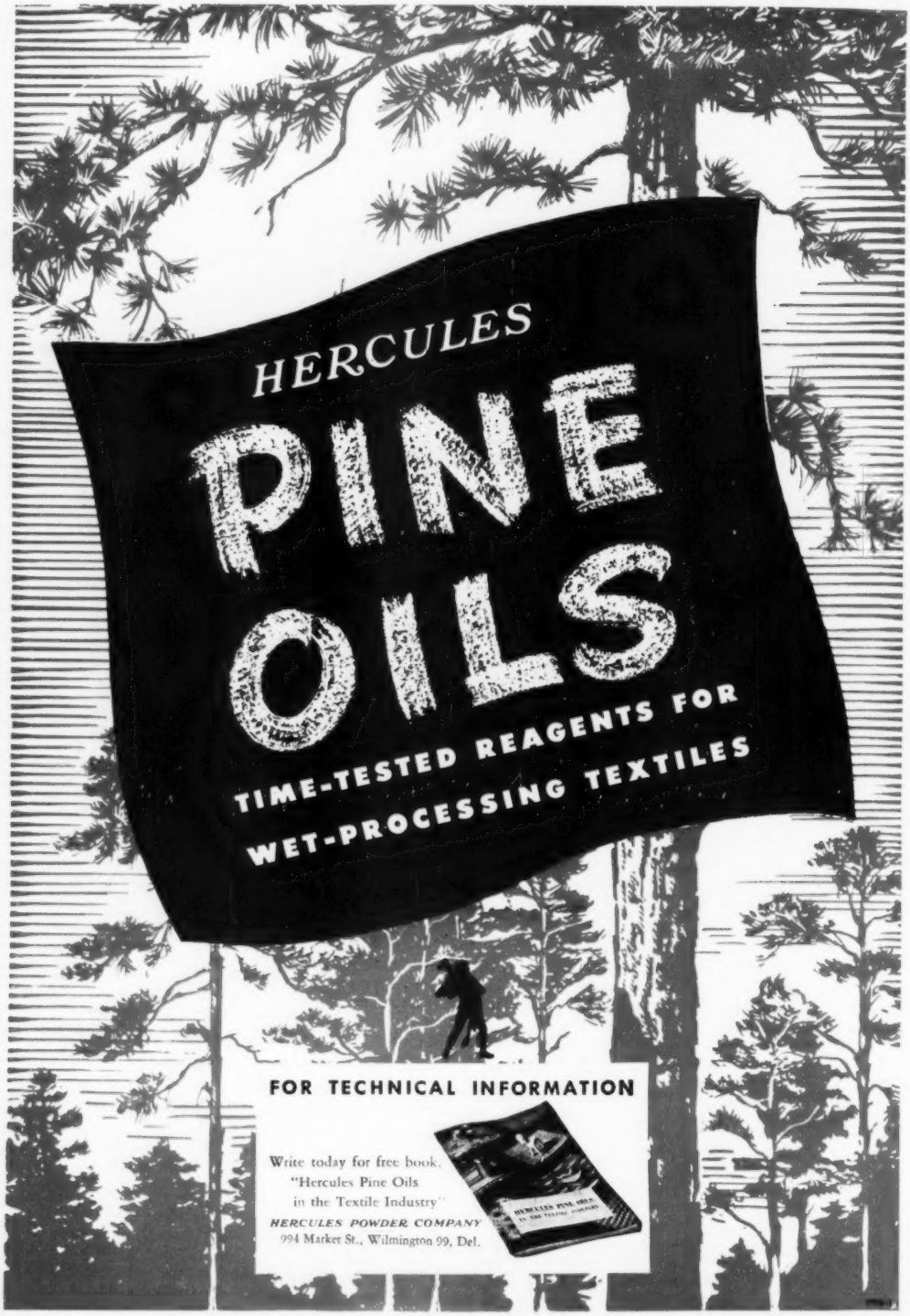
**By SETH CARTER**

COST AND COMPETITION compel many mills to eliminate one or more roving processes and to extend drafts in the spinning room. This reduction in processes is accomplished with little loss of quality in the finished yarn. Mill men pretty generally agree that the greatest contributing factor to successful long-draft roving is the recent and marked improvement in the quality of drawing sliver. Need for better quality drawing sliver existed in the initial cotton-mill installations; and it exists today as the long-draft roving process is being extended to the remaining carded-yarn mills, to combed-yarn mills, and, in modified form, to American-system worsted plants and to rayon-staple mills. In the most recent extensions of the process, the lessons learned in earlier installations contribute to the general improvement of the industry. And the techniques developed in the recent applications become serviceable to the old.

The mill man must recognize the factors responsible for the drawing-sliver improvement, because these factors are closely controlled when premium yarns are obtained from the long-draft organization. Careful classing and bale selection backed by fiber analysis, better blending and opening, and the control of settings, speeds, and tensions are some of the factors responsible for better drawing sliver. The control of weights at the draw frame has also attracted the attention of mill technicians recently. The careful weight-check system on American-system worsted draw frames [T.W., Oct. '48] is being used by an outstanding combed-cotton yarn mill in a thorough test to ascertain its advantages in maintaining uniform weights of cotton sliver.

**DRAFT AND TENSION.** Good quality of drawing sliver delivered to the roving frame is a long step on the way to premium yarn; but poor roving processing can spoil the quality. Uniform drafting and correct tension are the two most important factors to watch in the roving process. Roll settings generally are not critical except on worsted or combed-cotton stock where fiber lengths are largely predetermined by purchase or processing.

In most mills, the condition of the top rolls on the long-draft frame is of major importance. For example, the practice of slipping a worn top-roll from the front to the second or third line is forbidden on quality stock. A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roll that is unfit for the front line will not prove satisfactory as a bearing surface for the uniform drafting of stock. On certain types of long-draft frames, the wear on the second line of rolls has been found to be as great as that on the front line. A rebuffing or roll-replacement schedule should include all rows on the frame.

A straight-edge testing gage should be used to determine the amount of roll wear, or "hollow". The roll is set upon a "vee" block, and the straight edge is brought to the center of the boss. A narrow leaf gage is inserted between the boss and the straight edge to determine the amount of wear. In mills running high-quality stock, this roll wear must be determined so that tolerances may be set up as standards for fixer practice. Thus, the amount of time that a given type of top roll performs well on a particular stock determines the roll-replacement schedule. The finer or higher the quality, the closer the wear tolerance is set. It is conceivable that very fine yarn mills would have a "zero" tolerance for roll wear.

With only a few sets of spare rolls, all rows in the frame may be changed on schedule with little loss of product or quality. The life of the roll may be greatly extended if the traverse motions are adjusted to the greatest possible length of travel on the top-roll surface.

The diameter of the top roll affects the cushioning, setting, and drafting of the fibers. A standard should be set for the maximum and minimum diameters of a given roll. Maximum-diameter ring gages should be used on new rolls. Those that fail to pass through the ring should not be used until buffed to proper size. Minimum-diameter ring gages should be used on rebuffed rolls; and, of course, no roll should be rebuffed after it becomes small enough to pass through the ring.

**TABLE II—Roving-Frame Changes Resulting From Long-Draft Installation**

| | Roving-Frame Organizations | | | |
|---|---|---|---|---|
| | Before Long-Draft | | | After Long-Draft |
| Hank roving | 0.47 | 1.00 | 3.00 | 1.25 |
| Type of frame | Reg. | Reg. | Reg. | L. D. |
| Size | 12x6 | 10x5 | 7x3 1/2 | 10x5 |
| Spindles per frame | 68 | 84 | 160 | 84 |
| Cotton staple | 1 1/16 in. | 1 1/16 in. | 1 1/16 in. | 1 1/16 in. |
| Back stock | 66 gr. | 0.47 h.r. | 1.00 h.r. | 66 gr. |
| Draft | 3.8 | 4.3 | 6.00 | 9.80 |
| Spindle speed | 668 | 895 | 1,214 | 790 |
| Draft gear | 54 | 43 | 35 | 33 |
| Twist multiplier | 1.18 | 1.3 | 1.3 | 1.22 |
| Turns per in. | 0.807 | 1.31 | 2.25 | 1.38 |
| Frame twist constant | 50 | 44 | 62 | 44 |
| Twist gear | 62 | 34 | 27 | 32 |
| Rpm. front roll | 222 | 184 | 149 | 152 |
| Diam. front roll | 1 3/16 in. | 1 3/16 in. | 1 1/8 in. | 1 3/16 in. |
| Hanks 40 hr. 100% | 65.7 | 54.4 | 41.7 | 45.0 |
| Actual hanks | 57.5 | 51.0 | 38.5 | 44.4 |
| % efficiency | 87.5 | 93.0 | 92.0 | 92.0 |
| Lb. per fr. hank | 144.7 | 84.0 | 53.3 | 67.2 |
| Actual lb. per 40 hr. | 65.7 | 54.4 | 41.7 | 45.0 |
| Frames per operator | 2 | 2 | 2 | 3 |
| Rolls set 1st to 2nd | 1 3/8 in. | 1 1/4 in. | 1 3/16 in. | 1 3/8 in. |
| Rolls set 2nd to 3rd | 1 1/2 in. | 1 3/8 in. | 1 5/16 in. | 1 1/2 in. |
| Lb. per spindle hr. | 3.6 | 1.28 | 0.32 | 0.83 |
| Net wt. per bobbin (lb.) | 2.8 | 1.7 | 0.62 | 1.72 |

**TENSION AND HUMIDITY.** Faulty tension on the long-draft roving frame can spoil the finest drafting obtainable by ideal roll settings and conditions. The tension gear and the cones control the tension. The cone diameters of a roving frame are carefully determined by the machine builders. The starting points specified for cone belts should be carefully observed. Correct starting points and tension gears remove the need for injurious racking by frame tenders. Humidity control is essential within reasonable limits for uniform tension. Extreme variations in humidity cause variable tensions, necessitate gear changes, and encourage rack tampering. Expediency has no place in the card room that runs quality stock. Standards of performance, careful checking, and a system of maintenance that fit the particular roving frame are the real components of successful tension control.

Large variations in empty-bobbin diameters will also prevent uniform tension. Tolerances for new bobbin variations are easily established. All new shipments of bobbins should be reconditioned to card-room temperature and humidity before they are gaged. The rejection of a few off-size bobbins saves many potential ends-down in roving and spinning. All orders for new bobbins should be accompanied by a sample bobbin of correct dimensions and by the mill's own bobbin gage for tolerances on a barrel diameter.

**LAY GEAR EFFECT.** Selection of the lay gear has an important effect on the tension throughout the running of the doff. Many carders recommend a much more open lay than that given by the gear estimated from the frame lay constant. The gear obtained from the lay constant or the manufacturer's catalog suffices as a starter, but better selections can be made by inspection of the final lay of roving strands on the bobbin. The first lap of roving on the bobbin should result in the wood being barely visible between the layers of roving. Such errors as are made in estimating or calculating the lays per inch of roving usually fall on the close side, rather than the open. In many cases, the estimate or calculation for soft-twisted rovings may appear to be satisfactory when the first lap of roving is observed on the bobbin. But, subsequent investigation will show that the strand has become flattened and elliptical in cross section because of the tension during the packaging operation. The roving strands, therefore, usually occupy more space lengthwise of the bobbin than they do in the estimate. It is good carding practice to check the first lay of roving on a bobbin run out during the spinning operation.

Tests show that the judicious changing of taper gears can often increase the net weight of roving on a bobbin from 5 to 10%. This gain reduces roving-doffing and spinning-creeling operations considerably. However, it should be remembered that the nearer the taper approaches the horizontal, the more perfect must be the maintenance of the roving frame so that the condition of builder and rail motions will obviate the shelling-off of roving strands.

The twist gear is actually the production gear of the roving frame. In determining the twist required for long-draft roving, a broad viewpoint should be taken. A reduction in turns per inch means greater front-roll speed and, within limits, greater production; and low-twist roving is required by some types of long-draft spinning. The usual practice calls for minimum twist consistent with good-running qualities at the roving and the spinning frame.

(*Continued on page 196*)

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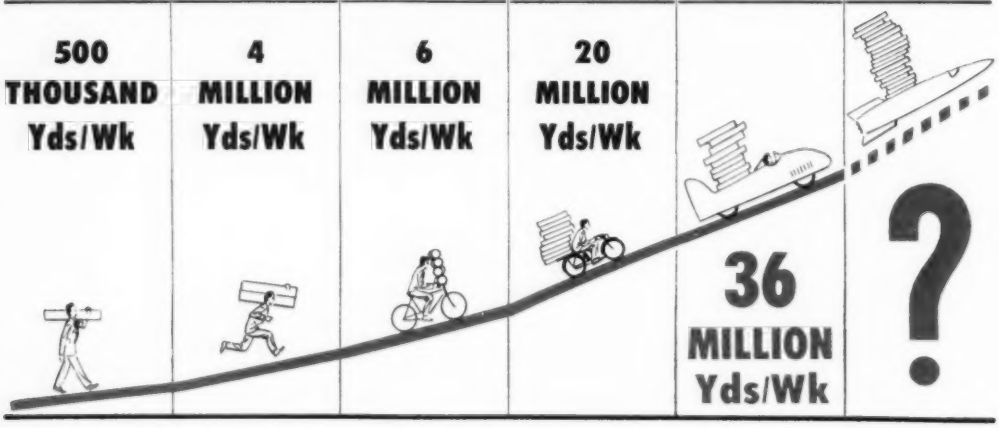


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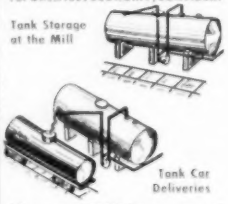


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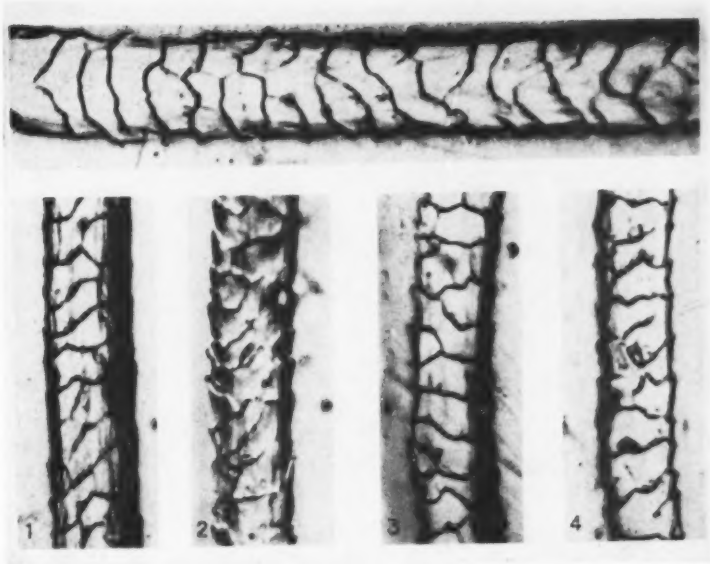



*LONGITUDINAL SEGMENTS of wool fibers show condition of the fiber before and after dyeing by four methods. Horizontal fiber is undyed wool. Vertical fibers are dyed with (1) vat, (2) acid, (3) chrome, and (4) Chromacyl colors.*

# Color and Process Vital In Use of VATS ON WOOL

***HIGHLIGHTS:*** *Methods used depend on whether material is in woven or fibrous form—Reduced method has some advantages over pigment method—Temperatures should not exceed 110° F.—Important to remove and neutralize all caustic—Selection of right vat dye for purpose is important.*

**By G. T. HUG**

*Technical Laboratory, E. I. du Pont de Nemours & Co.*

THE PROBLEM of applying vat colors to wool can be divided into two parts—(1) the dyeing of woven fabrics or piece goods, and (2) the dyeing of loose fibers such as raw stock, top, or even yarns. While at the present time the vat dyeing of piece goods may be of lesser interest from a commercial standpoint and is still in an experimental stage, it is particularly interesting as a problem of development. It has been generally accepted that piece goods would have to be dyed in open width form, for which elaborate and not readily available equipment is necessary, although it has been shown that indigo can be dyed in rope form (U. S. patent 2,420,729). All types of vat colors may be applied to wool fabrics in rope form, using conventional piece-dye kettles or reels, under conditions of alkalinity not too far removed from those generally employed in cotton dyeing. Temperature is the controlling factor in producing wool evenly dyed and undamaged by alkali. Time of dyeing insures good penetration and tinctorial strength. Further mill trials are desirable to confirm fully these results.

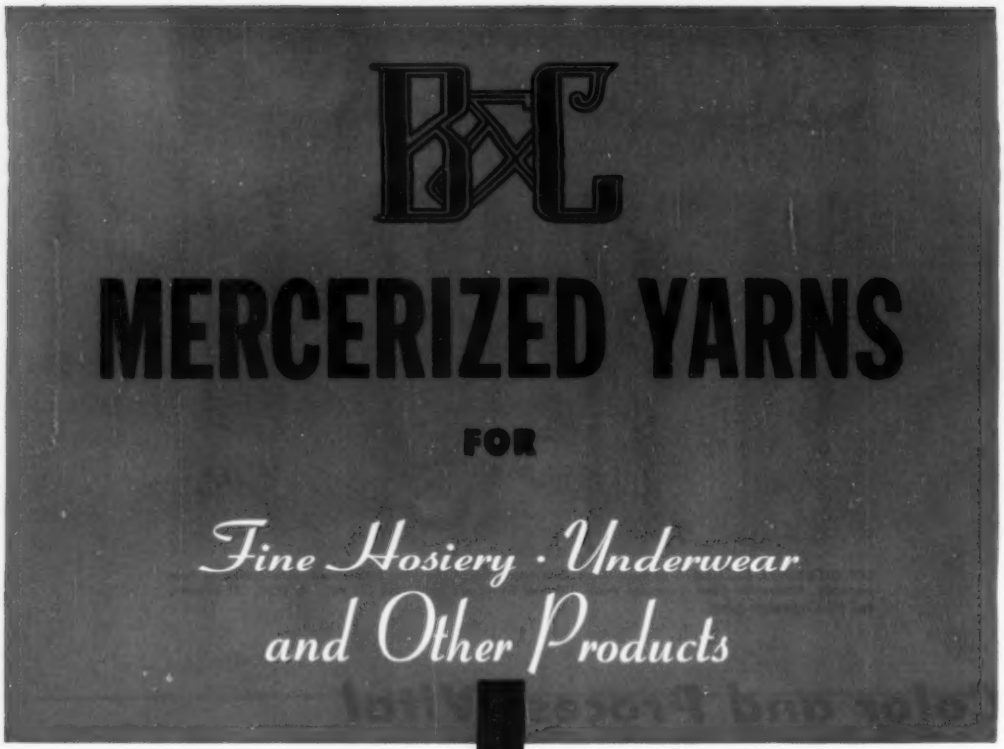
From paper presented before R. I. and N. Y. Sections of AATCC.

As wool will withstand considerable concentrations of caustic soda at sufficiently low temperatures without suffering any appreciable degree of degradation, the dyeing should be started at 90° F. or below and in no case should a temperature of 110° F. be exceeded. There are two methods which have given satisfactory results in large scale tests: the reduced and the pigment methods.

**REDUCED METHOD.** In the reduced method, which may be preferred, the vat color is reduced, at the normal temperature generally recommended for dyeing cotton, in one-tenth of the total dyebath volume with 3 oz. per gal. each of caustic soda and sodium hydrosulphite.

The wool to be dyed is first wet out on a reel machine or piece-dye kettle with 0.125 to 0.5 oz./gal. of a suitable welting agent such as Alkanol WXN. The formation of foam appears to be beneficial in wool dyeing, which is contrary to cotton-dyeing experience. To

(Continued on page 220)

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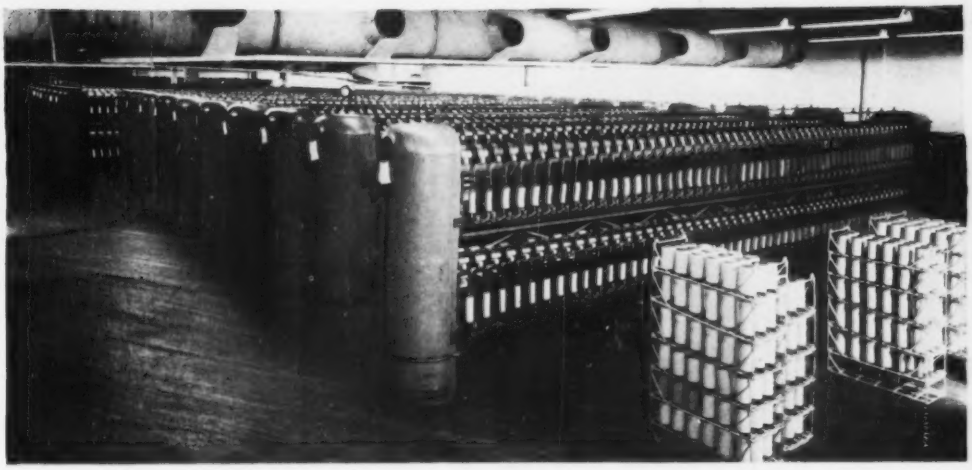

*DOUBLE-DECK up-twisters with 5-in. spacing are considered best for twisting single-end filament rayons. Half-pound packages are preferred.*

# UP-TWISTERS BEST For Filament Synthetics

***HIGHLIGHTS:*** *Some old machines being modernized—Accurate twist and clean yarns are basic—Ring twisters cost more to operate, make more waste.*

**By JOHN LUCAS**

THE IDEAL UP-TWISTER for filament synthetic yarns is a double-deck machine of 5-in. spacing with separators and individual motors for each deck. It should have provisions to put on endless belts without splicing; the separators should be easily removable for cleaning.

Old machines which do not have these features can sometimes be rebuilt to incorporate any or all of them. Oil pans between decks are other useful accessories that can be added to old machines—new ones have them. It is a decided advantage to have twisters that utilize change gears with one tooth for each turn per inch.

The foregoing has to do mainly with fixed aspects of up-twisters. The items described are the type that once acquired can be dismissed from the throwster's mind. But there are many other things the throwster must do that require his constant attention if he is to produce accurately twisted, clean yarn.

Following is a brief summary of points which should be watched in the up-twisting of synthetic continuous-filament yarns.

1. All spindles should be tested daily with a stroboscope.
2. All spindles and idlers should be oiled regularly, the period depending upon the spindles and idlers.
3. Spindle belts should ride at least ¼-in. off the flange of the idler.
4. All pigtail eyes on the girt rail should be aligned with the center of the cork take-up rolls and the tip of the spinning spindle.
5. Machines should be cleaned as often as necessary to keep them free from all loose lint, waste, and dirt.
6. The cork take-up rolls should be aligned so the take-up shaft (steaming bobbin) does not rub the edges in any manner.
7. All take-up fingers should be aligned in order not to bind steaming shafts.
8. Winding-spinning spools should not ride on the whorl of the spindle.
9. The winding-spinning spools should be well balanced and free from rough places.
10. All bearings should be kept clean of waste or excess oil.

**FLYER WIRES**

| Denier | Turns | Size Wire | |
|---|---|---|---|
| 75 | 22 | 8 | 4 Arm |
| 75 | 60 | 8 | 4 Arm |
| 100 | 50 | 8 | 4 Arm |
| 100 | 60 | 8 | 4 Arm |
| 150 | 22 | 8 | 4 Arm |
| 150 | 48 | 8 | 4 Arm |
| 200 | 48 | 9 or 10 | 4 Arm |
| 300 | 44 | 10 | 4 Arm |

*FLYER WIRES should be varied with the yarn being thrown.*

**FLYERS.** There are several new-type flyers available which seem to have some advantages over older types. One advantage is elimination of oiling; another claimed advantage is better balance. The eccentric type used in con-

(Continued on page 213)

# NO NEW WORLDS TO CONQUER

## OF IMPORTANCE TO TEXTILE PROCESSING

**HEYDEN FORMALDEHYDE** for water repellents, glazes, resins, anti-mildew agents.

**FORMIC ACID** for dyeing of acid colors; wool treatment for moth proofing; emulsions for impregnating fabrics.

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2270 years ago, Alexander the Great had conquered the entire civilized world. At the age of 32—as master of the earth—Alexander wept, for there were no more worlds to conquer . . .

So the story goes—but a far more dramatic one has been written by chemistry and its "conquerors", for there are always new worlds to win in the conquest of matter and methods—in the elimination of disease and famine, waste and want. Research recognizes no limitations, with newer and finer chemicals constantly at hand to point the way.

Heyden has always geared its facilities and creative skill to industry and science, offering the maximum in quality, purity and perfection in chemicals. Today, there are very few process industries—from drugs to dyes, perfumes to plastics, rubber to resins, leather to lubricants—which do not use Heyden's finer chemicals—to put the PLUS in their process!

*Technical Literature, shipping details and prices upon request on Company letterhead.*

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# Worker Health and Efficiency Govern MILL TEMPERATURE

***HIGHLIGHTS:*** *In evaporative cooling, demand for operator comfort tends to force humidity above optimum for processing—Worker efficiency begins to be reduced at 80° F. effective temperature — Power savings can result from careful selection of conditions to maintain given effective temperature.*

**By P. L. DAVIDSON**
*Consulting Engineer*

***MAXIMUM WORKER EFFICIENCY*** *cannot be maintained if effective temperature exceeds 80° F. Above this point, the body's metabolic rate increases.*

TEXTILE-MACHINERY PROGRESS has led to control of mill temperatures by introduction of saturated or supersaturated air in mill areas through central-station systems or units. In many cases observed, air quantities used were very large. Complete changes of air in mill areas once every 2 or 3 min. were not uncommon. Through air change, mill temperatures could be considerably reduced; but were still dependent upon the humidity required for the process and the outside wet-bulb temperature.

These limitations of evaporative cooling are well understood. Even weavers and spinners found that the higher the relative humidity, the lower would be the temperature of the room. Thus, there was a tendency for operators to force higher relative humidities than were desirable for the processing. For example, one cotton mill now equipped with refrigeration, spinning high counts of Pima cotton, has found that best running conditions in spinning are obtained with relative humidities in the neighborhood of 45%. Previous practice in the same mill was to operate at 60% during the summer time even though this high humidity drastically reduced production because of lapping and attendant difficulties. It was generally recognized that the only way to relieve this condition was by the installation of refrigeration, but at the time the estimated cost appeared so high that the proposition received scant attention.

The development of the centrifugal refrigeration machine in 1920 has proved to be an important factor in making practical the application of refrigeration to textile operations. The centrifugal refrigeration machine is ideally suited to handling large cooling loads such as are encountered in textile mills. Reduction in machine cost, coupled with increased acceptance of the air-conditioning idea by potential users, was the final step in rendering practical the application of refrigeration in the textile industry.

Extensive use of refrigeration in war plants as well as by prime manufacturers of synthetic yarns further influenced the textile industry toward favorable consideration of refrigeration.

**SELECTION OF TEMPERATURE.** In a weave room or a spinning room (and undoubtedly even in a full-fashioned hosiery mill, in spite of the fact that that division of the industry apparently has standardized on a dry-bulb temperature of 80° F. and 50% r.h.), it makes little difference what temperature is maintained from the standpoint of machine operation.

The important thing is to have the machine set for operation at a certain temperature and to maintain the selected temperature constantly. It is thus apparent that the selection of maintained temperature should be based primarily upon its effect on the health and comfort of the workers in the plant.

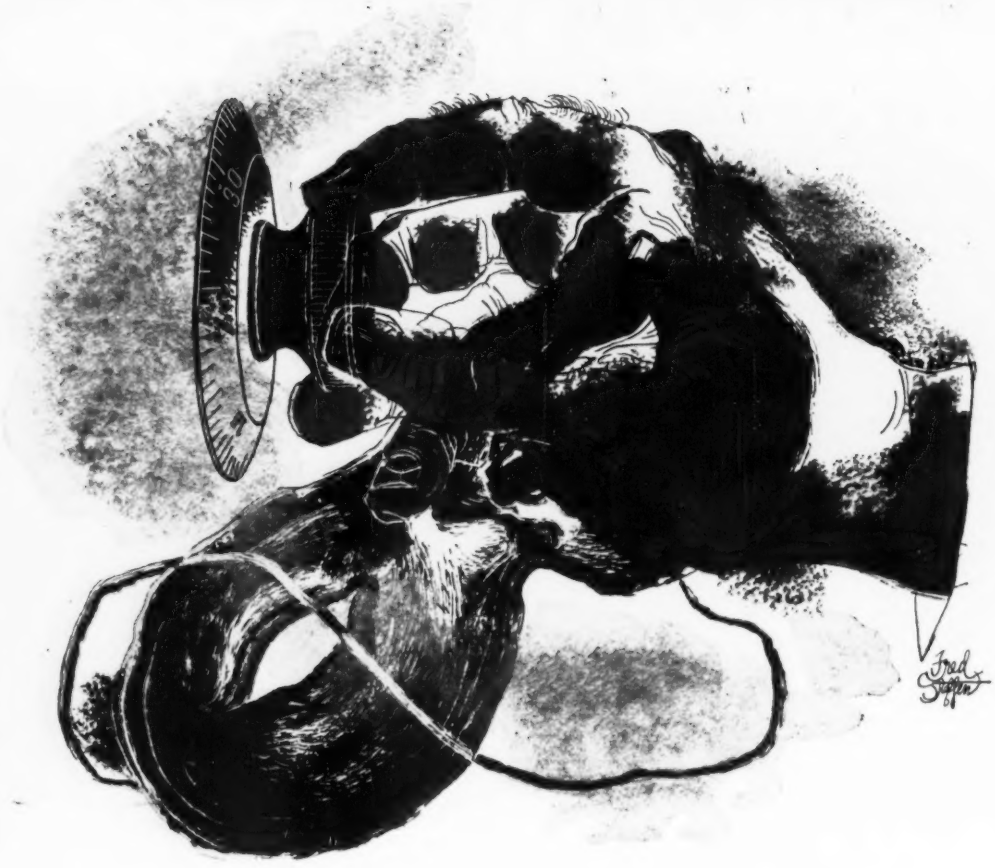
As the heat load in textile mills is of relatively high magnitude (a moderate size plant will require up to 1,000 tons of refrigeration), it is obvious that one cannot afford to be careless or over-conservative in the selection of equipment. Every effort must be made to minimize operating hours to keep operating costs in line. Thus it is important to maintain as high a temperature within mill areas as will be considered satisfactory to the workers.

An intensive study of the research data, published by the American Society of Heating & Ventilating Engineers, the Harvard School of Public Health, Cornell University, and other authorities on the effect of temperature and humidity on human health and comfort, brought forth the following facts:

1. For an average person engaged in light work, the body's metabolic rate starts to increase with a rise in effective temperature above 79° F. (For a discussion of effective temperature, see TW, April '47, p. 111). This point correlates very well with the inception of the rise in body temperature above normal. This is inimical to the best interests of the body which would indicate that, with a rise in body temperature, the metabolic rate

(*Continued on page 198*)

*Condensed from a paper delivered before the Carolina Section, American Society of Refrigerating Engineers, Greenville, S. C.*



# Is this PRODUCTION THIEF at work in your plant?

He works in thousands of plants—choking, stifling and slowing machines, upsetting schedules—costing industry untold sums of money that *can* be saved!

You may not think he's at work in *your* plant, but it will pay you to have a look—the sooner the better.

**For example . . . here are some places to look.**

Are the grease guns in your plant still filled by old-time "paddle" methods—wasting time, wasting grease, risking contamination and dirt? You've caught a suspect!

**You can save 3¾ man hours for every 100 lbs. of grease and eliminate contamination risks.**

Is the "man power cost" of your present lubrication method away out of line? Is it a hit-or-miss method? There's a production thief!

**There is a way to save up to 23.9 man hours in applying each 100 lbs. of grease!**

What about production losses from time-out-for-lubrication? What about repair and replacement costs for the parts that failed? More thievery!

**You can lubricate hundreds of bearings from one central point, with the right grease in the correct amount—while the machine continues to produce!**

Got an idea there may be a "production thief" in *your* plant—in the guise of faulty and costly old-time lubrication methods?

**There's one proven way to stop this loss.**

An Alemite representative can tell you in 10 minutes how Alemite Methods will simplify and better organize your lubrication procedures. He can show you how mechanized lubrication from barrel-to-bearing will increase your production and profits.

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**MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS**

STEWART WARNER

*"Give us the tools . . ."*

# *McGraw-Hill Surveys* BUSINESS NEEDS

**If it can get the money American industry in 1949 will go full steam ahead with a vitally-needed program of improving its facilities. This program since V-J Day has kept business expanding and has made belated headway in modernizing industry.**

**Furthermore, if it can get the money American industry will carry on for the next five years with its unprecedented program of expenditure for new plant and equipment. Plans already made call for spending about $55 billion.**

These are findings of the McGraw-Hill national survey of "Business' Needs for New Plants and Equipment." Major results of the survey, which have been rechecked since election day, are summarized on the following page. They report what American industry is now planning to spend for new plant and equipment. *They do not and cannot show what will be done if the plans are hamstrung by political action.*

*In 1949, the survey shows, American industry plans to spend $14.1 billion for new plants and equipment. That is only about 5% less than was actually spent in 1948.*

If these plans are carried out, actual capital expenditures this year may be somewhat larger than they were in 1948. That is because expenditures usually prove to be larger than planned.

Fulfillment of American industry's plans for investment in new plant and equipment this year would no doubt mean a continuation of general prosperity. The record shows that when capital expenditures are high general business thrives.

Even more remarkable than the 1949 prospect is the fact that:

**Industry already plans to spend $41 billion in the years 1950-53 to improve its plants and equipment.**

Plans tend to taper off, of course, as they are pushed further into the uncertain future, five years from now. But the striking fact is that plans for expenditures so far ahead are as great as they are. They show American industry's need for tremendous improvements in its plants and equipment.

Again, let there be no mistake. These survey findings are not a five-year forecast. They report what leading corporations now are planning to do – *if they can get the money.*

*But – won't industry be top-heavy with plants and equipment if it carries through any such program?*

The answer is clearly – "No".

Here are some of the reasons why not that were disclosed by the McGraw-Hill survey:

First, manufacturing industries are shifting emphasis from expansion to improving efficiency.

They have increased their total capacity 56% since 1939. Their expenditures in 1948 went almost 50-50 for expansion and improvement. But in the next five years they plan to spend three-quarters of their funds to replace and modernize facilities, only one-quarter for expansion.

Second, the prospective rate of expenditure for new plant and equipment is relatively low.

Planned expenditures for new plant and equipment in 1949 represent about 7.5% of the present value of all plant and equipment. That rate of capital expenditure is no higher than the rate during previous periods of prosperity. And industry must overcome years of starvation for new equipment, caused first by the depression of the 30's, then by diversion to war production.

Third, industry is following an extremely cautious policy in buying new equipment.

Three out of four companies report that they will not buy equipment unless it will pay for itself within five years. And a third of the companies report that they expect new equipment to pay for itself within three years. The reason most frequently given for such expectations was that all the money available can be spent on equipment which does pay for itself quickly.

**The program of capital expenditure planned by American industry is one of the greatest bargains ever offered to the American people.**

To pay for itself in a few years, as equipment must if most companies are to consider buying it, that equipment

continued on next page

## WHAT THE SURVEY SHOWS

● HERE ARE THE MAJOR FINDINGS of McGraw-Hill's survey of "Business' Needs for New Plants and Equipment". Rechecked since Election Day, results show what industry is now *planning* to spend for new plants and equipment. They do not forecast what will actually be spent. The survey shows:

1. Industry now plans to spend $14.1 billion in 1949 – and almost $41 billion in the four years beyond, 1950-53.
2. Manufacturing industries alone plan to spend $7.2 billion in 1949. This is 7.5% of the estimated value – $96 billion – of all manufacturing facilities.
3. Manufacturers estimate conservatively that it would cost $136 billion to completely replace their facilities with the most modern plants and equipment available.
4. Postwar expansion is virtually complete in most manufacturing lines. Major exceptions: steel and petroleum refining.
5. Expansion programs of railroads, utilities, and oil companies still have two to five years to run.
6. Manufacturing industries have increased their capacity 56% since 1939. But expansion is slowing down. Increase planned in the next five years is only 13%.
7. Efficiency is emphasized more and more in planning new facilities. Manufacturers plan to devote almost three-quarters of their funds to replace and modernize. In 1948, 58% went to increase efficiency this way.
8. Equipment should pay for itself in five years or less, say three out of four manufacturing companies. New buildings, say 77% of them, should pay out in 15 years or less.
9. Profits and reserves are counted on to pay for new buildings and equipment by three out of four manufacturing companies. Some 15% expect to borrow, only 9% plan to sell stock. However, 20% would like to sell stock, only 4% want to borrow.
10. More liberal depreciation allowances for income tax purposes would prompt almost two-thirds of the companies to speed their purchase of new plants and equipment.

● A copy of a complete report on "Business' Needs for New Plants and Equipment" may be obtained by writing me at McGraw-Hill Publishing Co., 330 West 42nd St., New York 18, N. Y.

must promise to produce much better products or make great savings in labor and material. The savings go first to the companies buying the equipment but, as they always have, they soon spread to everyone in the form of better products at lower costs.

*Where does industry expect to get the money to buy this bargain for the American people?*

Most of the companies covered by the McGraw-Hill survey (76% of the total) count on their own resources – largely profits – to pay for new plant and equipment. About 15% of them expect to borrow money, although only 4% like the idea of getting saddled with fixed debt. Only 9% of the companies expect to sell stock to investors, although twice that many report they wish they could.

*What are the chances that business can get the money?*

The survey provides no answer to that question. No survey can.

The answer will come from Washington – in what Congress does about taxes on profits and taxes on the millions of Americans who might invest a part of their income in industry's new plants and equipment.

The answer will be found also in the energy and skill shown by investment bankers, particularly in mobilizing the resources of the millions of Americans whose incomes have increased enough since 1940 to make them potential direct investors in industry.

Still another important part of the answer will be given by labor leaders. About half the companies surveyed by McGraw-Hill are holding back on new construction – primarily because of high costs. What organized labor does about wages and productivity can swell or shrink that percentage.

**The McGraw-Hill survey leaves no doubt that American industry is fulfilling its responsibility. It is planning the capital improvements needed to make the nation secure, prosperous, and progressive.**

But business today lacks confidence and badly needs added incentives. Proper taxation and increased depreciation allowances are vital if we are to open the capital markets to finance industry.

What will happen now depends in large part on what is done in Washington. In his State of the Union message, the President said that "business should plan for steady, vigorous expansion." But in his budget message he proposed new taxes which would divert a substantial share of the money industry is using for expansion and improvement. Moreover, he said nothing about the vital issues now freezing the capital markets.

It is not possible to have it both ways. Fulfillment of the President's tax program means cutting industry's program for new and better equipment. It means slowing down industrial progress. It means delaying the advance toward much higher standards of living tomorrow in order to have a little more government spending today.

**I urge you to see that your Representative and your Senator have all the facts on industry's needs for new plant and equipment. What they do to this program will have a decisive bearing on the nation's security and welfare.**

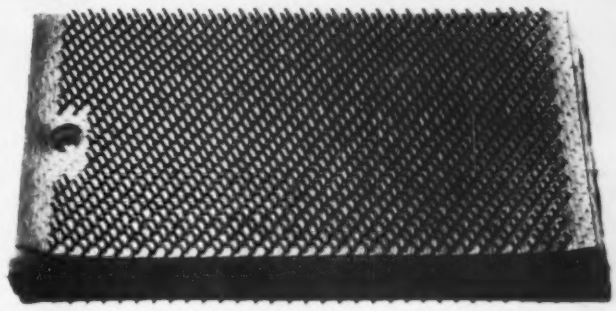
James H. McGraw, Jr.

*President, McGraw-Hill Publishing Company, Inc.*

*This is the fourth editorial of a special series on industry's needs for new plants and equipment – and what these needs mean to all Americans.*

TEXTILE Equipment NEWS

## New Card Clothing Cuts Stripping Frequency



*NEW WIRE SHAPE, a plastic-faced foundation, and wire angle and height are factors said to influence the non-loading property of this card clothing.*

Savings in production, labor, and raw material are promised by a new flexible card clothing which requires much less stripping than conventional wire clothing. The new clothing has been developed by Benjamin Booth Co., Allegheny Ave. and Janney St., Philadelphia 34, Pa. Called Strip-O-Matic, the new clothing can be stripped and ground when desirable.

The clothing has undergone successfull tests in a carpet mill for over a year and is at present under further test in other woolen, worsted, cotton, and asbestos plants.

In one carpet-mill test, the card clothing ran for periods averaging 14 days before clothing was stripped. In other tests, the period between strippings has run as long as 19 days.

The non-loading characteristic of the new card clothing is said by the manufacturer to be a result of several factors combined: shape of the wire, use of a plastic face on the clothing foundation, and height and angle of the wire. The wire teeth have a long, narrow shape in contrast to the usual round shape. The foundation face is of rubber-base plastic which resists scuffing and bruising sometimes caused by stripping. The plastic face is also oil- and water-resistant.

The wire is available immediately and can be furnished in a limited number of sizes, but more are being added to make the range complete. Cost of the clothing is said to approximate that of conventional wire clothing and to be less than metallic clothing.

*A HAND-OPERATED 36-in. roving reel is constructed of cast iron and is equipped with a visible yardage counter. An adjustable creel accommodates any size of card-room bobbin.*

*THIS SKEIN REEL is adjustable for skeins from 30 to 92 in. Reel is of hardwood, smoothly finished. The base is made of rigid cast-iron construction.*

## Production Produced By Standard Equipment

Six new items of production and laboratory equipment are being produced by Standard Mill Supply Co., P. O. Box 1524, Providence, R. I.

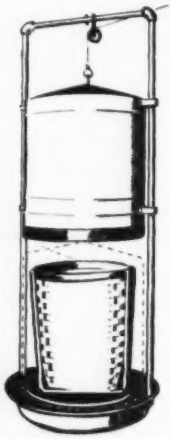
An improved water-seal yarn steamer features simple construction and inexpensive operation. Practically no escape of steam is claimed. The steamer holds baskets of 6-bushel (about 58-lb.) capacity. Boiler pressure of 15 lb. is required. Basket cover is of 24-gage galvanized steel; base is cast iron.

The steamer is furnished complete with pulleys, cabled steel rope, counter-balance weight, and base complete and ready for installation with the exception of the steam valve and drain piping. The unit requires a floor space 40 in. square and 8 ft. high.

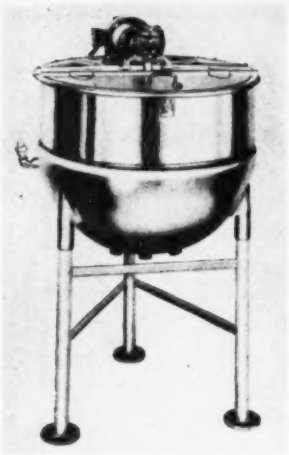
A new cloth-inspecting, winding, and measuring machine for all types of fabric has a collapsible cloth roll which eliminates the use of paper tubes. The cloth roll is said to operate perfectly in both directions. Cloth can be very easily removed by collapsing the cloth roll. Knife-type cloth rolls can be furnished for customers who must use paper tubes.

The machine can handle goods of any width up to 60 in. and in rolls up to 30 in. in diameter.

The drive permits free-wheeling at all times without the necessity of



*ESCAPE OF STEAM is virtually prevented by the water-seal feature of this steamer.*



*STAINLESS STEEL is used in the construction of this size kettle.*

*ELIMINATION OF PAPER TUBES is made possible by the collapsible cloth-roll of this inspecting frame.*

*TAPES for spinning and twisting frames of all types can be sewed by this portable unit.*

stopping the motor. A ¼-hp. motor is ample for the operation of the machine, although a ½-hp. motor is regularly furnished for any standard voltage required.

The measuring cylinder is made of cast aluminum accurately turned to produce a circumference of 24 in. This cylinder is said to require no covering, and slippage is completely eliminated, the company states.

Machines are furnished with measuring counters in various types.

The overhead through-light inspection attachment permits the operator to inspect a wide area of cloth. Carrier rolls are made of aluminum and are mounted in ball bearings. If desired, they can be made to exert tension by the tightening of one screw. Supply brackets can be placed on the floor back of the operator and can be used in connection with the through-light inspection attachment.

The standard stainless-steel steam-jacketed size kettles are of welded construction. All seams are pressure tight, and the two-piece hinged cover is also stainless steel. The kettle is said to heat quickly and uniformly and to have no "hot spots" due to shallow metal areas.

Kettles are furnished with single-acting agitators made of stainless steel which operate normally at a speed of 36 rpm. All agitators are directly connected by a ¼-hp. motor which operates on a.c. current, 110 v., 60 cycles.

All kettles in excess of 50-gal. capacity are equipped with two steam-inlet connections. All kettles have a connection for steam outlet and waste outlet.

Kettles are constructed to withstand 40 lb. working pressure.

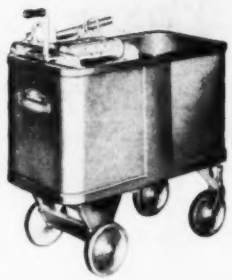
A new portable tape-sewing machine produces a lockstitch with accurate stitch adjuster; including a reverse motion and self-releasing bobbin winder. It has a hand-driven attachment.

The machine is equipped with a round bobbin which has a capacity of 31 yd. of thread. It also has a floating presser foot.

The portable truck is constructed of hardwood, is equipped with an adjustable seat and storage compartment, and is mounted on four casters.

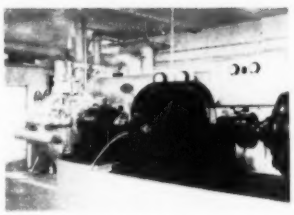
The complete unit weighs 65 lb. Weight of the head only is 26 lb.

## Mop Truck Has Streamlined Design



*A STAINLESS-STEEL and galvanized-iron mop truck has been developed by Finnell System, Inc., 3811 East St., Elkhart, Ind. Features of the new model include rounded corners, recessed wheels, a shield to prevent mop from dropping into dirty water while being wrung, and two 28-gal. tanks.*

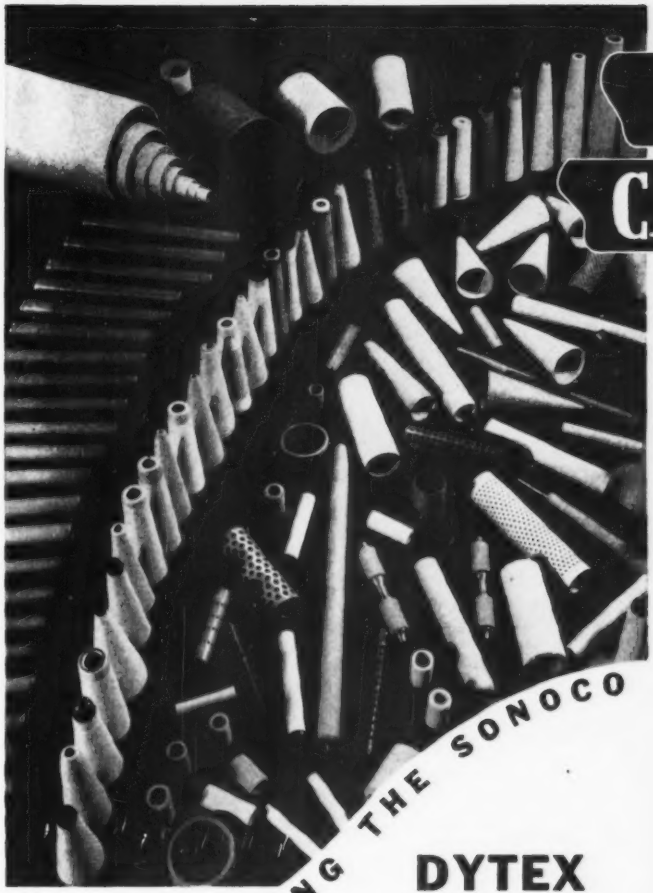
## Magnetic Drive Controls Refrigeration Compressor



*WATER TEMPERATURE for washing circulating air is said to be held within ½° F. of selected value in the mill where this magnetic coupling is installed.*

Precise control of atmospheric conditions through exact regulation of centrifugal-refrigeration compressors is said to be made possible by a new magnetically operated adjustable-speed coupling developed by Electric Machinery Mfg. Co., Minneapolis 13, Minn.

The all-magnetic drive, now installed in some Southern full-fashioned hosiery mills, couples the motor to



# PAPER CARRIERS

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**TEXTILE NEED**

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## DYTEX TUBE

**for package Dyeing**

A SONOCO development that has been improved and refined to the point where it is accepted as standard for use in package dyeing.

A product for one-time use, the SONOCO Dytex Tube is of laminated fibre construction, impregnated for extreme strength, toughness, and resistance to dyeing and bleaching formulas.

Of uniform accuracy, Dytex Tubes are made in varied sizes to fit package dyeing equipment —to save one complete rewinding operation.

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the compressor by magnetic means only and permits the mill to control speed and to obtain the most precise adjustment in the operation of refrigeration equipment.

The drive consists of two main elements, a magnet and a ring. The magnet consists of salient poles mounted on a spider carrying field coils; construction is practically the same as the rotor of the synchronous motor. The ring consists of a solid steel ring in the smaller sizes and of a laminated core and squirrel-cage winding in the larger sizes. The magnet acts as a rotor inside the ring. Both are free to turn, however, with the ring (or outer element) coupled to the motor, and magnet attached to the compressor or gear unit. As the driven ring is driven at motor speed, there is a relative motion between it and the magnet. When the magnet is excited, this motion induces eddy currents in the ring which cause a turning torque to be transmitted through the air gap. The amount of torque is roughly proportional to the excitation. By varying the amount of excitation the transmitted torque is controlled.

## 3,800 Colors Printed at One Time

Printing of an almost unlimited number of colors on fabric from a single roller during one passage is claimed for a new and compact printing machine developed by Chromostyle, Ltd., Stone Street Mills, Manchester 1, England.

According to the manufacturer, all colors are carried on the single printing roller in a plastic layer. Thickness of the layer depends on the length of the run to be made. Ease of preparation of the rollers is said to have been developed to the point where unskilled workers can learn the process in a few weeks. Preparation of the roller to reproduce a given design requires less time than in the conventional printing process, it is stated.

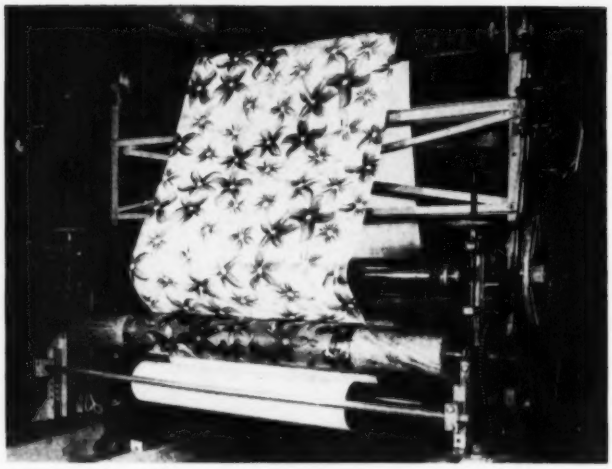
Fabric to be printed is chemically treated before printing. Finishing processes are conventional.

Degree of penetration is said to be so controllable that fabrics ranging from sheer nylons to pile fabrics can be printed. The design on the latter penetrated to a depth of 1 in., it is claimed.

Number of colors which can be printed is virtually unlimited, the manufacturer reports. While rollers carrying only about 100 colors are most common, up to 3,800 different colors have been printed experimentally at one time.

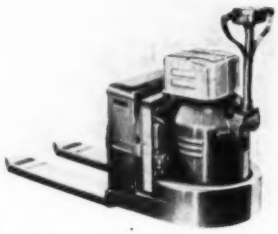
Cost of the machine is stated to be about one tenth that of conventional printing machines. Floor space required is said to be about 75% less, and weight of the new machine is reported as about one-twentieth the weight of conventional units.

It is anticipated that the process will be licensed.



*THIS PATTERN, typical of work done by this new machine, is reported to have eighty colors.*

## Towmotor Announces First Powered Hand Truck



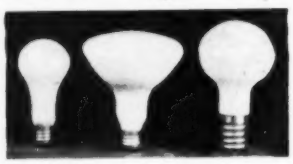
*A SAFETY FEATURE of this powered hand truck is a power cut off which operates instantly when the handle is released.*

A new battery-powered hand pallet truck has been developed by Towmotor Corp., Cleveland, Ohio.

The unit is easily maneuvered in close quarters and has a high safety factor even under maximum loads. Major features include rapid lifting of loads; high traction; maximum power; safety handle with control buttons for either right- or left-hand operation; three-point suspension for smooth travel over uneven surfaces; and differential-action trailer wheels that eliminate wheel scuffing and insure easy turning, thus saving excessive wear on both trucks and floor.

One safety feature of the new model W electric hand truck is an automatic power cut off which, upon release of the control handle, instantly cuts off the power supply to the motor and applies a brake to the drive shaft, stopping the truck.

## Lamp Finish Gives Better Light



*PERFECT DIFFUSION and higher light transmission than previously possible are claimed for a new white finish for incandescent lamps developed by General Electric Co., Lamp Dept., Nela Park, Cleveland, Ohio. The new finish is a silica substance and is available in three bulbs. Left to right, they are 100-w., 150-w. indirect, and a 100-200-300-w. three-light lamp.*

## Efficiency Continuously Recorded and Indicated

Continuous recording of the efficiency of any number of machines is said to be possible with an instrument developed in Switzerland and available in the U. S. from Textile Industry Research, Inc., 22 E. 40th St., New York, N. Y. In addition to recording, departmental efficiency at any instant can be shown to workers by a large

# 'TOPS' FOR IDENTIFICATION AND PROTECTION

# KAUMAGRAPH MARKING

This hat not only identifies its wearer's function. It inspires confidence in the product of his skill. This is the essential associative value Kaumagraph Dry Transfer marking can give your product at point of sale. The recipe is simple, speedy and economical and the results outstandingly evident on any textile, rubber, leather or synthetic material. Build customer confidence in your product and speed its sales now with identification that protects and proclaims its quality. There's a Kaumagraph product for your purpose and a Kaumagraph man at your call.

*Do you use stickers? It will pay you to investigate Kaumagraph Embossed Seals. Produced in any color including gold and silver or embossed on metallic paper or foil. Our Art Department will gladly send sketches for approval.*

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dial mounted in the room with the machines concerned, or can be shown to management by desk recorders which can be placed in offices either in the mill or at considerable distances.

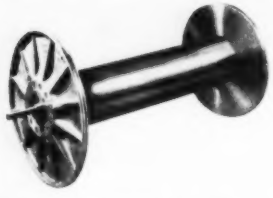
Either the recorder or indicator can be coupled to all machines or to a selected group by a simple arrangement in a central control panel.

The continuous efficiency record would be valuable in determining the effect on efficiency of such factors as:

1. Time, as fluctuation caused by early-morning work, late afternoon fatigue, mid-morning slump, etc.
2. Rest periods.
3. Day or night operation.
4. Work stoppages for weekends or longer.
5. Climatic conditions.
6. Personnel benefits, as incentives, bonuses, etc.
7. New methods and standards or job loads.
8. New manufacturing methods, as effect of a new size or cloth construction on efficiency of selected looms.
9. Air conditioning or humidity.

The unit continuously registers two figures on a graph—over-all efficiency and efficiency of machines actually in operation. The curve is plotted against figures indicating the hour. The graph can be detached daily for evaluation.

## Section Beam Designed For Fine-Denier Yarns



*REMOVABLE HEADS and shaft are important features of this aluminum section beam for synthetic yarns.*

An aluminum section beam designed for fine-denier synthetic yarns has been developed by Hubbard Spool Co., 1626 Carroll Ave., Chicago, Ill.

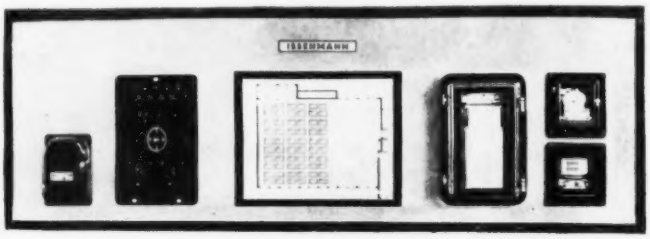
The new beam is all aluminum except for steel head inserts and shaft. The head is rib reinforced to withstand pressures exerted by various types of fine-denier synthetic yarns when warped to full capacity.

Both heads may be detached from the barrel in a matter of minutes in case of accidental damage; and any part of the assembly may be replaced individually, offering a saving on replacements. Shafts also are removable, having specially designed journals.

To meet high-precision requirements, the Hubbard beams are well balanced to assure free running of yarns from the beam. All surfaces coming into contact with the yarn are highly polished to remove minute metallic burrs that could cause snagging.

Head diameter is 30 in., barrel diameter is 12 in. Delivery at present is 90 days.

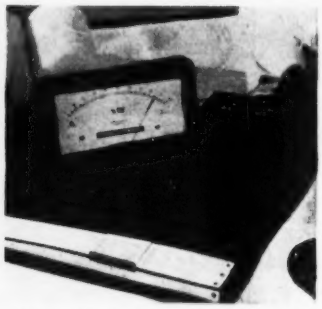
## A CENTRAL PANEL CAUSES EFFICIENCY TO BE SHOWN . . .




*NERVE CENTER is the control panel which contains electrical equipment, controls, and a graphic recorder. Center floor plan can have lights to indicate individual machine stoppage.*

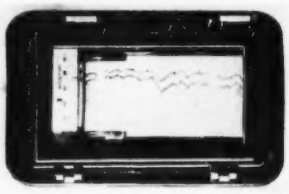
## . . . . ON A DIAL IN THE DEPARTMENT OR IN OFFICES . . . .

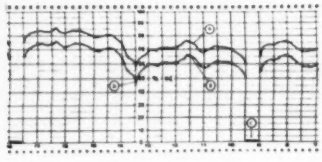
*WORKERS can find out over-all efficiency at any instant by a glance at this large dial.*



*EFFICIENCY AT ANY TIME can also be determined by executives through use of this desk indicator.*

## . . . . AND TO BE RECORDED INSTANTLY ON A GRAPH





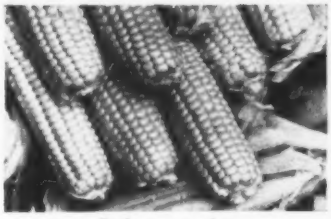
*RISE AND FALL of efficiency throughout the day is graphically recorded. Analysis of the chart can uncover causes of efficiency drops and help to make subsequent corrections.*

## Tenter Frame Has Rugged Construction

A new tenter frame specially designed for cotton finishing has been developed by Winsor & Jerauld Mfg. Co., 1268 Eddy St., Providence 5, R. I. Design and construction of the tenter is said to be adaptable to future needs because it anticipates requirements and speeds to be developed in future years.

The driving end of the tenter frame proper is built on a welded-steel bed plate so braced internally that all of the rotating and sliding members are assured of permanent alignment, the manufacturers states. The bevel gears

**TONS**
**TONS**
**TONS**



Revolutionary process?

Yes! Bulk Corn Starch processed with the same precision control of color, texture and purity as National's specialty starches.

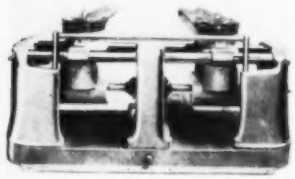
CLEAN? National is the first—*and only*—wet miller to use high-speed, enclosed MERCO centrifuging to separate starch from gluten in a continuous 100% mechanical operation. Separation is now effected mechanically in 3 to 5 minutes—instead of 10 to 12 hours on open starch tables which have been a long countenanced source of contamination. QUANTITY? National can now supply corn starch in any quantity—large or small! The entire processing, including the MERCO operation, requires only one-eighth the time needed by the starch table method. This speeds large quantity deliveries. In addition, National's MERCO system can be completely rebalanced in 3 hours. This permits us to make small or varied runs to meet the specific requirements of the textile industry for: ***Hoosier Pearl Corn Starch . . . Thin Boiling Corn Starch . . . Chlorinated Corn Starch . . . British gums*** and ***Dextrines.***

Technical service? Call on our laboratory anytime. Delivery? Prompt CL or LCL shipments from our plants or convenient warehouses.

Write for full details: 270 Madison Avenue, NEW YORK 16; BOSTON, PHILADELPHIA, ATLANTA, NEW ORLEANS, INDIANAPOLIS, CHICAGO, SAN FRANCISCO and other principal cities. In *Canada*: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In *Holland*: Nationale Zetmeelindustrie, N. V. Veendam.

**BULK STARCH**
**BULK STARCH**
**BULK STARCH**

**National**
**STARCH PRODUCTS**



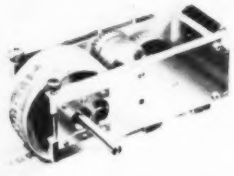
**UNRESTRAINED EXPANSION** endwise is permitted by the design of this new tenter, eliminating wear caused by misalignment.

run on anti-friction bearings which carry the sliding gears, full floating. Vertical gears are straddle mounted. This construction is said to insure permanent alignment of the gear teeth.

The drive for the tenter chains consists of a silent chain drive from the motor to the sliding gear shaft. Replacement of a single inexpensive sprocket is all that is required to change production speed. The silent chain drive is inclosed in a cast-iron oil-tight casing.

According to the manufacturer, a careful study of the reasons for mechanical failures in older models of tenters indicated that the endwise expansion of the rails caused a misalignment of the bearings in the drive that, in turn, resulted in destructive wear. The company's new design embodies provision for unrestrained expansion toward the entering end, regardless of the temperature used. The feed bars (three of which are usually furnished) and the stripping bar are carried on anti-friction bearings. Lubrication of the chain-driving sprockets is provided for, and undue wear in the clip sprocket hole avoided.

## Labels Printed On Moving Fabric



**CONSISTENT-QUALITY** impressions of labels or designs on moving fabrics are said to be obtainable with this attachment.

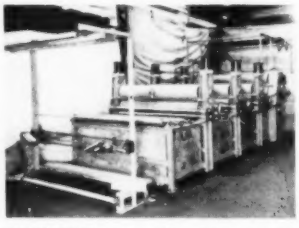
A new attachment for continuous-processing machines that automatically imprints trademarks or distinctive designs on fabric traveling at speeds up to 900 ft. per min. has been developed by Adolph Gottscho, Inc., 1 Hudson St., New York, N. Y. The unit, actuated either by friction contact with the moving material or by connection to a convenient shaft on the machine to which it is attached, is known as the Rolaprinter.

Mounted on a calendering, finishing, or other continuous-processing machine opposite a roller or idler that can serve as an impression cylinder, the Rolaprinter is said to make permanent "print-quality" impressions of consistent intensity on smooth or rough-finish woven fabrics during winding or unrolling of the material.

Incorporating an ink-control system similar to that used in the aniline-printing press but new in marking attachments, the Rolaprinter is said to use instant-drying inks of any color for imprinting light or dark and on porous or smooth surfaces. Also, it is stated, this feature makes refilling of the ink fountain necessary only once daily.

The Rolaprinter consists of an open ink fountain, an ink-transfer roller, an inking roller, and a die-wheel (printing roller) which holds fixed or interchangeable rubber dies or type. All three rollers are geared together to insure proper agitation of the ink and precise "kiss" impression between printing die and printing surface. Imprints up to 6 in. wide and 36 in. long, before repeating, are obtainable. The complete unit is small and compact, the smallest model occupying a space of only 16x5x5 in.

## Four Finishing Units Announced by Birch Bros.

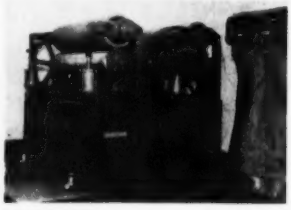


**DYE KETTLES** can be released for more dyeing by using this open-width machine for scouring and setting of rayon blends.

Four new finishing machines have been developed and are now available from Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

A new ball-bearing, adjustable-spiral opening-roll unit is designed to remove wrinkles and doubled selvages from all types of fabrics during processing in the open width. Some common applications are on padders, mangles, mercerizing ranges, open-width dyeing machines, printing machines, etc.

**WRINKLES** and doubled selvages are removed from open-width fabrics by this adjustable-spiral opening-roll unit.



**EXACT PRESSURE** can be reproduced in processing similar fabrics by use of the pressure gages on the top rolls of this mangle.

**DRYING IS SPEEDED** by use of this adjustable-slot vacuum box.

Rolls and stay rods are made of stainless steel, brass, or cold-rolled steel as the particular application demands. The machine is designed so that any desired degree of contact of the rolls with the cloth may be obtained. The machine is fitted with cut gears, one of each pair being of fiber for quiet operation. Spiral rolls have self-sealed ball bearings.

A new ball-bearing, continuous open-width machine has stainless-steel tanks and tank rolls and rubber-covered squeeze rolls to which pressure is applied by air cylinders. Before each pair of squeeze rolls are spiral rolls for removing wrinkles and double selvages. The entering end of the machine is fitted with tension rails and a cloth guider. Delivery end of the machine is made with a folder.

The fourth or last tank has heavy squeeze rolls running in roller bearings for extracting purposes. In place of heavy squeeze rolls, a vacuum extractor may be used.

The drive is by motor through a variable-speed drive and roller chain.

The machine is designed for crabbing, scouring, open soaping and other applications where a continuous open-width machine is needed. It is also used on rayon blends for setting and scouring. By using this machine for the scouring and setting of these fabrics, the dye kettles are not tied up for this purpose.

A new twin mangle combines a

# CLEANLINESS REACHES THE TOP

**. . . when QUADRAFOS* gives washing a lift**

Your scour hits new heights of cleaning power when QUADRAFOS helps you get the most out of the least soap and alkali. Softening even the hardest water right down to the zero mark without the slightest trace of precipitation, QUADRAFOS is clearly water's most efficient partner. That's why you'll find nothing like the way QUADRAFOS loosens the grip of grease and soil, breaks them up into tiny particles, prevents them from re-gathering on material or equipment. Write for complete information about the many ways QUADRAFOS can help you "clean up" in textile wet processing.

softens water without precipitation...deflocculates ...redissolves precipitates...promotes free rinsing

ONLY WITH **QUADRAFOS** CAN WATER DO SO MUCH, SO WELL

*Reg. U. S. Pat. Off.

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Please send me further information about the use of QUADRAFOS in textile wet processing. I'm particularly interested in:

- ☐ Raw wool scouring
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- ☐ Kier boiling
- ☐ Reducing bleach requirements
- ☐ Brighter, more uniform dyeing
- ☐ Viscosity control of printing pastes
- ☐ .....

*Name* .....

*Firm* .....

*Address* .....

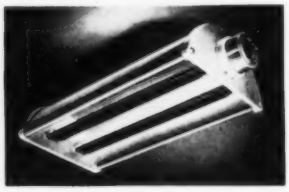
.....

*City* ..... *Zone* ..... *State* .....

water mangle and a starch mangle as one unit. The machine is ball-bearing equipped. Each nip has a bottom brass roll and a top rubber roll. Pressure is applied by air cylinders. Piston rods are connected to gages in order that the same pressure may be maintained at each end of the top squeeze rolls. When it is desired for any reason to have a greater pressure on one side than on the other, this may readily be done by means of the valves.

A new adjustable-slot vacuum box is now being applied in cotton-finishing plants in place of water mangles. Increases in drying speeds have been obtained in printing plants by extracting moisture and removing printing paste and other foreign matter from back grays. The box is also being used on terry towels for increasing the extraction, speeding up the drying, and raising the pile to make a better appearing and loftier towel.

## Electric Heater Supplements Dryers



***AN ELECTRIC HEATER** and parabolic reflector for supplementary drying and heating processes is available from Herbert Products Co., 14 Durland Place, Brooklyn 12, N. Y. A four-position heat control gives four heat intensities up to 500° F. Heating elements are inclosed in steel sheaths for maximum protection.*

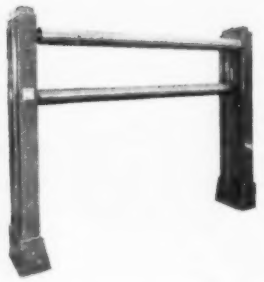
## Three Finishing Units Developed by Cook P & N

Three new machines, a three-tank open-width processing machine, a cloth-opening range, and a compensator have been developed by Cook P & N Machine Co., 365 Dorchester Ave., Boston, Mass.

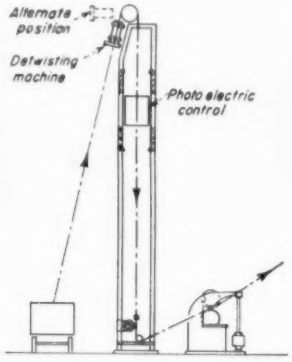
The newly designed three-tank open-width processing machine has tanks, tank rolls, and bottom squeeze rolls of stainless steel. Top squeeze rolls are rubber-covered. All rolls, with the exception of the tank rolls which run in Graphalloy or rubber bearings, are mounted in self-aligning ball bearings. Pressure is provided through weights and compound leverage on the last nip. Drive is by the side shaft through bevel gears and jack shaft.

Two special features are rubber expanders, set ahead of each pair of squeeze rolls, and stainless-steel bow bars between each pair of guide rolls and at each set of squeeze rolls. The three-tank open-width processing machine is designed to work in a range with Cook P & N padders, although it may be used alone. It is available in widths from 50- to 110-in. roll face.

The new Cook P & N cloth-opening range is called a complete range on one frame. The range, for continuous operation, is controlled by a beam of light. This method of opening cloth is said to eliminate the rough effect of scutcher opening. Cloth is taken from trucks, bins, or washers and passed through the detwisting machine. Two sets of photoelectric cells automatically cause the detwister machine to remove either a right- or a left-hand twist. The cloth then passes to the guider opener where it is spread to width and guided into a receptical or delivered to padders, dryers, or other succeeding processes. This automatic means of control does not contact the fabric in any way and eliminates all possible fabric distortion or stretch. The opening range may be installed either horizontally or vertically, and is now in use on cotton, rayon, and blended fabrics.



***A RACK-AND-PINION COMPENSATOR** of fabricated-steel, primarily designed to work in range with the company's own textile-finishing equipment, has been developed by Cook P & N Machine Co., 365 Dorchester Ave., Boston 27, Mass. The new compensator is of sturdy box-type design. The frame incorporates a counterweight slide and supports a rheostat which is driven through roller chain and sprockets. The entire slot on the outside of the frames is covered by an end cap. The compensator is said to be in operation in widths up to 110 in.*




***THE OPENING RANGE** is adaptable to either vertical (shown above) or horizontal installation.*

***STAINLESS STEEL** is used in the construction of this new three-tank open-width washer.*

## Charge Indicator Helps Prevent Overdischarging

***STATE OF DISCHARGE** at all times is shown by this battery-charge indicator.*

To improve mill habits in using the industrial-truck battery, and to prevent battery operation in an overdischarged condition, Gould Storage Battery Corp., Trenton, N. J., has developed a new charge indicator. The indicator gives the momentary charge condition of the battery and thus keeps the operator informed as to its state-of-charge throughout the shift. The dashboard-mounted instrument is said to have three major advantages: (1) lower cost than similar instruments (2) ability to report the state of discharge at any instant rather than concealing the information until the danger zone (overdischarge) is

# UNION SPECIAL*

## *Faster Seaming!*

Among users of industrial sewing machines, UNION SPECIAL is a name that has come to mean *Faster Seaming* . . . also more work with less effort and expense. Union Special has not come by this name without good reason. Every Union Special machine you buy is specially designed and built to help you handle your particular production job BETTER . . . FASTER . . . and CHEAPER. For recommendations, see your local Union Special representative, or write.

### THIRTY-NINE-TWO

The modern machine for seaming and overedging light to medium weight knit fabrics. Now made even better with improved lubrication and thread handling for greater output with less effort. Ask for recommendations.

*Ask for copies of these* **BULLETINS**

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**UNION SPECIAL MACHINE COMPANY**

403 N. Franklin St. • Chicago 10, Illinois

*®

# INDUSTRIAL SEWING MACHINES

reached, and (3) tamperproofness against piece-work operators looking for the last half-hour pay at the expense of the battery.

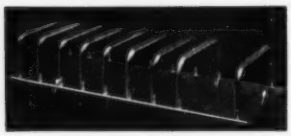
The indicator is marked-off into four sections, each a different color to indicate the state of charge of the battery. A rugged all-aluminum case, designed especially for vertical mounting, houses the instrument. The gage is read while the truck is actually in operation.

The instrument can be used with 3-, 6-, 12-, 15-, 16-, 18-, and 24-cell batteries, a series of resistors and taps being arranged to permit the desired adjustment. A toggle switch disconnects the instrument from the battery during charging.

The indicator is available for immediate delivery and carries a 90-day guarantee.

## Accessories Developed For Nylon Knitting

A full line of plastic accessory units for use in knitting plants manufacturing women's nylon hosiery has been developed by Plasti-Line, Inc., Jacksboro at Broadway, Knoxville 18, Tenn. The units, called Nu-Line have undergone extensive mill tests and are now available generally.

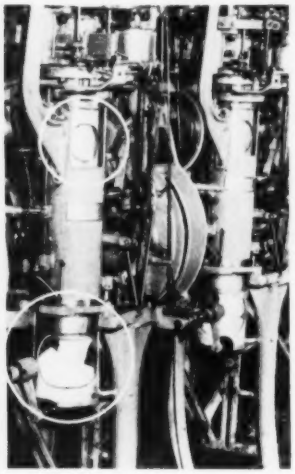


*A SEPARATION RACK is made with ½-in. clear-plastic rod and a clear-plastic base 12x30x3 16 in. Seven separations are standard. One separation is approximately 6 in. wide, and others are approximately 2½ in. wide. Additional separations are available at extra cost.*

*THIS SEAMER TRAY attaches with plastic brackets beneath the seaming table. The angular shape is designed to minimize interference with the operator. Capacity is one dozen stockings.*

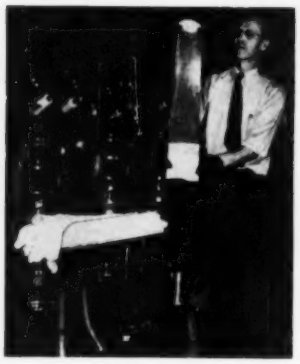
*EXCESSIVE YARN BREAKAGE is said to be reduced by use of this plastic yarn box designed to hold yarn in the seaming department. The box also helps control moisture of yarn.*

*A GUARD for use on Singer sewing machines is made of smooth, transparent plastic designed to cover rough surfaces on the machine.*



*PLASTIC LINER AND COLLECTOR are designed for use on seamless-knitting machines. Smooth liner surface is said to prevent snags, picks, or pulls. Collector catches stocking as it leaves machine and is designed to keep picks and pulls at a minimum.*

*DECREASED HANDLING is said to result from use of this Nu-Line preboarding rack of smooth plastic. The rack is mounted on a 40-in. cast pedestal base. A bridge separates stockings as operator pulls them onto boards.*



*EXAMINING BOARD AND CARRIER are mounted on single base. Tray holds two dozen stockings. A hand counter records number of stockings, minimizes rehandling.*

*LIGHTWEIGHT EXAMINING GLASS has solid base, no screw holes.*

*A BAKELITE INSPECTION FORM of rigid, flat construction has a ¾-in. metal shaft and needle-bearing mounting suitable for attaching the form to inspection tables.*

# Duesberg-Bosson Woolen Cards

**for the manufacture of Fine, Medium and Carpet Wools**

***Greatly increased production . . . Improved quality with savings in card flyings and wastes***

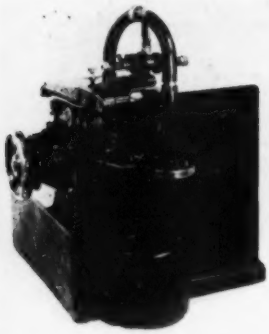
*Detailed circular sent on request*

## Additional Wool Preparing Machinery

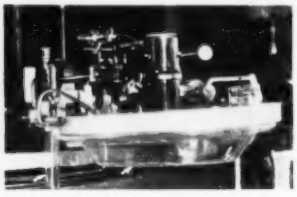
Oiling Device • Mixing Picker (Fearnaught Type)
Picker Feeders • Automatic Card Feeders
Patented PERALTA Machine
Intermediate Center Draw Broad Band Feed
Tape Condensers
Woolen Cards with Two, Three and Four Cylinders

**Duesberg-Bosson of America, Inc.**

FITCHBURG, MASSACHUSETTS



ROUGH SURFACES on old sewing machines are completely covered by this plastic guard.



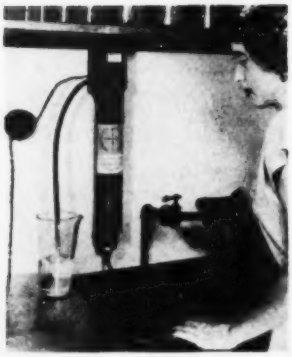
CLIP AND LOOPER guards are shown by arrows. Clip guard (left) is made of smooth, transparent plastic and is designed to prevent stockings from rubbing against metal or cloth clip collections. Smooth plastic looper guard (right) is said to decrease picks and pulls underneath looper. Soiling is prevented by inclosing oily mechanism. The guard can be custom-made to mount by three screws on any type of looping machine.

### Demineralizer Attaches
## To Laboratory Faucet

A Filt-R-Stil cartridge demineralizer for delivering the low-cost chemical equivalent of distilled water, without heat and at a maximum rate of 10 gal. per hr. has been developed by the Ion Exchange Products Dept., American Cyanamid Co., 30 Rockefeller Plaza, New York, N. Y.

The new unit, like previous models, consists of a disposable cartridge containing Ionac ion-exchange resins; a bracket or support for the cartridge; and an electrical-conductivity indicator. The indicator shows the quality of all treated water and indicates when the cartridge is exhausted and needs replacement. In addition, the conductivity indicator now shows the quality of treated water continuously. The unit requires only two watts of electricity.

To install, the unit need only be

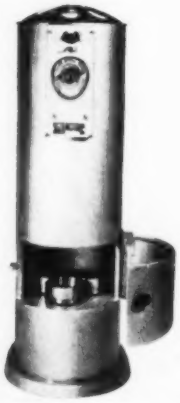


QUALITY OF WATER is shown continuously by a conductivity indicator.

fastened to a wall and the inlet tubing attached to a cold-water faucet. When the water is turned on, it flows through the cartridge and emerges essentially mineral-free. The water delivered by the cartridge unit is guaranteed to contain no more than 10 ppm. of dissolved ionized solids, exclusive of silica.

Price of the Filt-R-Stil cartridge demineralizer is $59.50.

### Oven Dries
## Samples Rapidly



SAVINGS IN TIME are said to result from operation of this new hot-air drying oven.

A high-speed drying oven designed to cut laboratory drying time in half has been placed on the market by Harry W. Dietert Co., Detroit 4, Mich.

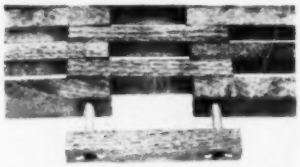
A motor-driven fan forces filtered air past electric heating elements. Air temperature is thermostatically controlled at any chosen drying temperature between 150° and 350° F. Heated air flowing against and past the sample in the Speed Oven rapidly picks up moisture or volatile material.

The Speed Oven has a drying space 8 in. in diameter and 6 in. in height. Over-all height of the unit is 29 in. Power requirements are 2,800 w. at 115 or 230 v.

A 3-in.-diameter atmosphere-exhaust connection is provided so that heated air and any obnoxious fumes may be piped into an exhaust hood or duct.

The oven is said to offer savings in laboratory-staff time and to speed up the reporting of analyses.

## Coil-Spring Fasteners Improve Floor Mats



DYEHOUSE FLOORS can be kept safe from slipping accidents by use of this improved matting.

A safety floor mat with processed hardwood links and flexible fasteners has been developed by The Hough Shade Corp., Janesville, Wis.

The new Ra-Tox Springtred mats are constructed of small wooden blocks, or links, each 4½x2⅛x⅜ in., arranged in an open-checkerboard pattern, and held together by coil-spring fasteners. Wood links are of selected ash. New coil-spring fasteners are of galvanized steel, are highly resistant to corrosion and rust, and are said to be as durable as the links themselves. The fasteners are also said to be flexible enough to permit normal expansion or contraction of the links, and to allow mats to conform to rough or uneven floors.

Placed beside machines and in traffic aisles, the mats permit water and dirt to fall through the network of links to the floor, leaving a clean, dry, nonslip footing for workers. The mats are flexible, are made in units no wider than 2½ ft., and may be quickly and easily rolled up to permit cleaning.

The floor mats are made in three standard stock sizes: the smallest being 23¾x37 in. and the largest, 30x72 in. Finish is brown stain.

MORE
TEXTILE Equipment NEWS
ON PAGE 238

NEW ENGLAND MILL REPORTS:—

# Reduced Thread Breakage
# Less Machine Vibration
# More Uniform Dressing

*with*
**FULLERGRIPT THREAD DRESSING BRUSHES**

WHEN the brushes wore down on a thread dressing machine in a New England mill replacement was made with Fullergript brush strips. These brushes are formed by loop-anchoring brush-material in metal channels. This brush material can be varied, according to application, from stiff to very soft. With this construction a more dense brush face is presented to the threads, which as a consequence are dressed more thoroughly. Also, the dense brush face gives threads firmer support, and thus reduces breakage.

These narrow Fullergript brush strips are mounted directly on the spiders without slats, so there is far greater opportunity for heated air to pass between brushes and reach the threads. With Fullergript brush strips the thread glaze is improved.

The success of Fullergript on this first thread dressing machine led to the application of these brush strips to the other machines in this mill. Then the practice was taken up by other mills, until today you will find 97 thread mills changed over to Fullergript. You can secure more information about the use of Fullergript on thread dressing machines, simply by writing to

**FULLERGRIPT** The **FULLER BRUSH CO.**

INDUSTRIAL DIVISION • 3594 MAIN ST. • HARTFORD 2, CONN.

THIS IS NO. 74 OF A SERIES ON

# GETTING THE MOST FROM TWISTING

Information about twisting designed to show improvements in twisting equipment and new ideas in the twisting operation

*Fig. 1. Feed Roll Assembly.*

## NEW DEVELOPMENTS IN ATWOOD MODEL 10 RING TWISTER

Among the improvements that have been made in The Atwood Model 10 Ring Twister to increase efficiency are the following:

*1. Feed Roll Assembly*

Wear on the plunger cable has been reduced by means of an improved type of connection between the cable and the stud (A) on the intermediate gear lever. The Stakon clamp (B) which is now used, pivots on the stud when the plunger cable is in motion; this eliminates crimping of the cable at C and results in longer cable life.

Positive stopping action has been further insured by a redesign of the latch lever. This part is now bent over at the top and has a hole (D) to hold the trip wire in its proper operating position. Whenever an end breaks or a runout occurs, the trip wire falls directly between the latch knock-off cam and the feed roll latch lever, producing a positive stopping action.

To facilitate threading and tying knots in single ends, the eye in the feed roll thread guide (E) has been redesigned so that the yarn can be quickly and easily slipped into the thread guide. The auxiliary stop motion lever (F) has been given an oilless-bushed fibre roll positioned on the left-hand side of the feed roll housing. Both of these parts are attached to the feed roll housing by separate screws. In the rearrangement of parts, the operator has been given more freedom of hand movement while threading the yarn around the feed roll.

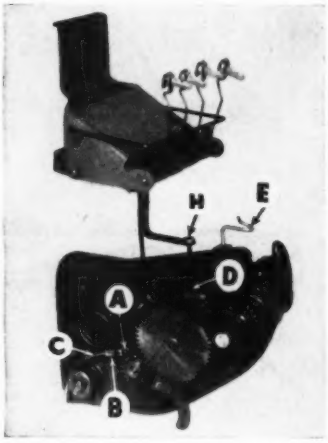



*Fig. 2. Feed Roll Assembly with cover removed.*

The knock-off motion has also been improved by making the trip wire connection from a metal stamping to provide a rigid mounting. A projection (G) contacts the feed roll housing when the trip wire has reached the contact point between the knock-off cam and the latch lever; this prevents the trip wire from dropping too far into the housing. The trip wire is screwed into the connection and is held firmly in place by the lock nut (H). A vertical adjustment of the trip wire can be made by loosening this nut and turning the wire in the connection.

*2. Builder Lever Straight Bobbin Builder Motion*

The design of the builder lever of the straight bobbin builder motion has been changed slightly to protect against any possibility of an excess of oil overflowing when the lever is depressed by the action of the cam.

The front wall has been altered so that it now tapers gradually downwards from both ends of the reservoir toward the center. The top of the wall at center is just slightly above the center of the cam roll. By keeping the oil level at the center of the cam roll, it becomes impossible to flood the reservoir to such an extent that the oil will overflow when the lever is depressed below the horizontal.

To help maintain the proper condition, the words, "Oil level to center of roll" are molded into the casting.

See pages on Universal and Atwood Machinery in TEXTILE CATALOGS AND DAVISON'S

*Reg. U.S. Pat. Off.

23-8-5

March 1949

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL ® WINDING COMPANY

INCLUDING ATWOOD DIVISION

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

# Pointers FOR SUPERVISORS

## How the Management Team Can Build Better Human Relations

**By GLENN GARDINER**

### If You Have to Lay Off Men

GLENN GARDINER

At some time or other, almost every supervisor is called upon to deal with the human problem of layoffs.

In textiles, seasonal slumps, changes in styles, technological changes, moving of plants to other locations, or a slump in general business conditions are among the factors which may make layoffs necessary at various times.

#### WHAT the Supervisor Must Know

When a layoff is to be made, the supervisor needs to equip himself with certain information before he talks to employees affected.

Most important is a knowledge of company policy and the union contract, if one is in existence. Why is the layoff necessary? Is it likely to be permanent? Temporary? What is the approximate duration of the layoff? Not all these facts may be available; but if they are, the supervisor can utilize such information to advantage. Workers being laid off feel all the more resentful if they are needlessly "left in the dark."

Is the layoff confined to one or several departments, or is it plant-wide? To what extent can transfers to other departments be resorted to?

#### WHO is to Be Laid Off?

It oversimplifies the problem to say that in a unionized plant, layoffs are made according to seniority. Some contracts provide that seniority is to be a determining factor only if ability is relatively equal. Others state that the employee with greater seniority is to be kept only *when qualified*.

The supervisor, when given a choice, should show no discrimination. Certainly, the amount of a man's union activity must never influence him. He should not confuse ability to perform the work with personal characteristics. Of course, a supervisor would not be human if he did not prefer to keep a likeable chap, who gets along well with fellow workers, to some sour-faced worker who is nevertheless an excellent technician. But the supervisor must be able to substantiate his choice by facts and production data.

In the non-unionized plant, the situation may be even more complicated, if a thoroughly fair and just treatment is given the problem. Here the supervisor has a number of variable factors to content with. Length of service and ability of worker must be his first considerations. Then

comes the question: To what extent should he be influenced by the personal background of the worker? Should he lay off single men, in preference to fathers of families? Should married women, with husbands working be among the first to go? Should the fellow who expects to be drafted be kept on for what may be a temporary period? What about the man who is always threatening to quit anyway?

Again, personal likes and dislikes should have no place in making the choice of who is to be laid off. Yet, sometimes they unconsciously do, in spite of our best intentions. One supervisor, who lived some distance from the plant, hesitated when faced with laying off the man who frequently drove him to work.

The wise supervisor will carefully evaluate each man's contribution to the over-all success of the department.

#### HOW is the Lay Off to Be Made?

In dealing with the lay-off problem, here are summarized some points to which every supervisor should give careful consideration:

1. In determining which employees are to be laid off, thoughtful and fair consideration should be given to workmanship, length of service, value on the job, and family responsibilities. Unless justice is done in the selection, no amount of mere talk can convince anyone that fair treatment has been accorded.

2. Take time to explain the whole situation fully to the man, sympathetically, and unhurriedly.

3. Try to give some idea as to how long the layoff will be.

4. Offer to help him in any way you can to locate another job, giving him names of people to whom he might apply, or furnishing him a note of introduction to other prospective employers.

5. Be ready to explain the basis on which his selection for a layoff was determined.

6. Make the man feel that you sincerely regret the conditions necessitating his layoff and make him feel that he would like to work for you again.

7. Remember, if the man leaves with the feeling that his layoff has been based upon some personal feeling or favoritism, you have failed in handling the layoff situation with him in an effective manner.

The way we do things may be as important as the action itself.

# Kinks AND SHORT-CUTS

## Roving-Frame Spindle Steps Oiled Without Being Lifted

✱ **PRIZE WINNER FOR MARCH**
*(December contest)*

Oiling the spindle steps on a roving frame is not a major job, but the time lost in oiling the steps on every frame in a card room amounts to a good bit of production. Since most card rooms do not have sufficient capacity to stay up with the spinning room, eliminating any loss of production is very worth-while.

When the spindle steps are to be oiled, the frame tender must run the ends over to give enough slack for the oiler to raise the spindles out of the steps without breaking the ends. After the oiling is done, each end must be examined to make certain that it is properly threaded in the flyer, wrapped around the presser, and in the presser eye. Usually, many ends have to be corrected.

All of this work must be done while the frame is stopped. If the spindles are oiled while the frame is stopped for doffing, part of the lost time is saved. Not all of it is saved though, for the oiler must remove the front bottom casings to get to the steps; and the casings on the floor interfere with doffing.

The spindle gears can be changed so that a frame can be oiled in less than 10 min., without all the trouble caused by removing the casings and lifting the spindles out of the steps. A gear that can be oiled in this manner is shown in the accompanying sketch.

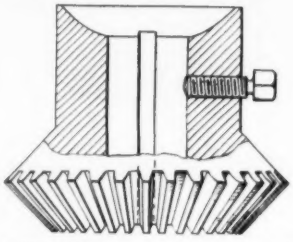
The "kink" is to bevel out the top of the gear hub to create an oil well and to cut a small channel similar to a keyway down the inside of the gear bore.

When the step is to be oiled, the oiler leaves the spindle in running position in the step. He merely lifts the washer around the spindle that covers the hole in the top bottom casing and pumps oil into the well at the top of the gear hub. The oil flows down the channel and spindle into the step. [Some new roving frames have "self-oiling" spindles—Ed.]

It is not recommended that the steps be oiled with the frame running, for that probably would be classified as an unsafe practice and also the spindle might sling a little oil. However, the steps could be oiled with the frame running—which is entirely impossible when steps are oiled in the usual manner.

The way I went about changing our spindle gears was to get 20 spare gears, have them cut in the shop, put them on a frame, and then have the 20 gears that were taken off the frame cut. The work was done when the shop was not rushed and could spare a man to do the job.

We've been using this kink for many years. I know it pays. *(K-1060)* Wm. Shaw, *Providence, R. I.*



*SPINDLE STEPS on a roving frame can be oiled in less than 10 min., without the spindles being lifted out of the steps or the gear casing being removed, by cutting the gears as shown here. Oil is pumped into the well at the top of the gear hub and flows down the channel into the step.*

## Bundles of Socks, Ties, etc. Counted Mechanically

Bundles of socks or boxes of hose, ties, etc. can be counted automatically by a counter attached to a conveyor line as shown in the accompanying sketch.

At the delivery end of the conveyor, build a frame to support hinged drop board *a*, a stop, and a mechanical counter *c*. Use a counter that has a proper recording swing, and attach the

## A $25 SAVINGS BOND FOR YOUR KINK

✱ **You undoubtedly know of some kinks and short-cuts that are helpful to mill operation. Write them down and send them in. We pay promptly upon acceptance—*before* publication. In addition, we award *every month* a $25 Savings Bond for the accepted kink we consider most useful.**

**Don't delay. Don't worry about dates. Send in your kink *now*. There is always a Savings Bond prize contest going on!**

**Don't take time to polish up your writing. We'll do that. Don't waste time to make a finished drawing, as our draftsmen will take over. Just write enough details and do enough drawing (if any drawing is necessary) to make clear to the editors how your idea works and what machine or process it is applicable to. Photos can be sent.**

**Look over the kinks in this and other issues. They will offer you some useful ideas, and they will also suggest other ideas you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments that are of merit—anything that will help production, improve quality, or cut costs.**

**Writing kinks is easy. It's fun. It's profitable. Give it a try. *Now.***

### RULES OF CONTEST

1. No limit to number of entries.
2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
5. Unless you advise to the contrary, we assume that we may sign your name to your kink when published.
6. Judges of the contest are editors of TEXTILE WORLD. Their decision is final.
7. Send your entries to either address:

**TECHNICAL EDITOR**
**TEXTILE WORLD**
**330 W. 42nd St.**
**N. Y. 18, N. Y.**

**ASSOCIATE EDITOR**
**TEXTILE WORLD**
**P. O. Box 1641**
**Columbus, Ga.**

**HOUGHTON IS PROUD TO ANNOUNCE.....**

## a brand new *flake-type*

# CERFAK

## detergent

## and wetting agent

...a development of seven years of research on surface-active agents...with these important characteristics:

An anionic detergent possessing fast wetting speed . . . a pale straw-colored flake-type product . . . not decomposed by either acids or alkalies; may be used over the full pH range; chemically neutral . . . dissolves readily at room temperature. ● CERFAK is an excellent detergent in both soft and hard water . . . can be used with alkaline builders of all types . . . is free rinsing . . . has good dispersing properties . . . superior to soap on a money-value or pound-for-pound basis. For descriptive folder, write **E. F. HOUGHTON & CO.**

303 W. Lehigh Ave., Phila. 33, Pa.
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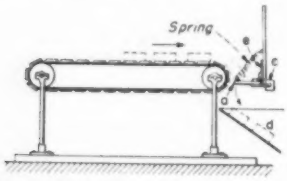
recording shaft of the counter to the edge of a as shown in the sketch.

To use the counter, set it on zero at the beginning of a lot to be counted. Place the packages to be counted in single layers on the conveyor belt. Allow enough space between packages to permit drop board a to lower and then raise again into position.

When a bundle or box reaches the delivery end of the conveyor, it drops onto board a. The weak springs at each end of a permit a to be forced down by the weight of the package. The clock shaft is turned and a unit is registered on the dial. The package drops off board a into hopper d, and board a is pulled into position again by the springs.

If no conveyor belt is used, a spring-bottom box that works in a similar manner will record the number of packages. It would be necessary, of course, to drop only one package at a time into the box. *(K-1059) H. J. Haas, Martinsburg, W. Va.*



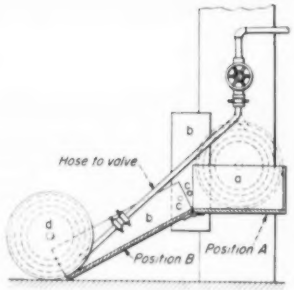

***COUNTING BOXES** or other packages can be done automatically by a mechanical counter attached to a drop board. The package comes off the conveyor belt and bears down the drop board, causing the counter to register a unit.*

## This Storage Method Keeps Fire Hose Ready

When a fire occurs in an area where a water hose is used to put out the fire (such as in opening bonnet), valuable time may be lost because the hose cannot be quickly and easily unrolled and put into use. Such confusion can be avoided if a reel and chute similar to those shown in the accompanying sketch are used.

A wooden box (a in the sketch) with an open top and an open end is mounted on a post or wall where the hose is attached to the water line. The box should be large enough for the rolled-up hose to fit into when the hose is not in use.

A wooden chute is made as shown at *b* in the sketch and fastened over the open end of the box. The bottom of the chute should be hinged to the bottom of the box so that the chute can swing down from position A to position *B*. A pin placed in hole c holds chute *b* in an upright position.




***A WATER-HOSE REEL** mounted on a post or wall in a box equipped with a chute, as shown here, can be quickly unrolled when the hose is needed to fight fire. When the hose is not in use, it is kept in the box.*

The water hose is rolled up on reel *d*. The reel should have smooth wooden or metal ends so that it will roll freely down the chute when the chute is dropped into position *B*.

When the hose is not in use, it is kept in the box, with chute *b* in position A. When the hose is needed, the pin is removed from hole c and the chute dropped to position *B*. Reel *d*, containing the rolled-up hose, is rolled onto the chute and turned loose. The reel rolls down the chute and falls to the floor. The job of unrolling the hose can then be done quickly and easily by rolling the reel along the floor. *(K-1051) H. J. Haas, Martinsburg, W. Va.*

## Yarn Catching on Cone Stopped by Cotton Threads

Yarn catching under a cone during knitting is an old problem. Nearly every knitting mill has, at one time or another, devised some way to stop yarn from catching on the cone and interfering with the feeding of the machine.

The device shown in the accompanying sketch is for the same purpose. I think that it is much better than the usual pads, springs, etc.

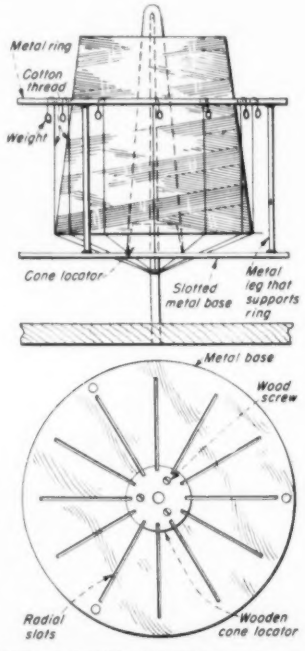
The "kink" here is to mount cotton yarns or threads in such a way that they always bear against the lower rim of the unwinding cone without interfering with the knitting yarn itself. The threads keep the knitting yarn from sloughing off the wound base of the cone, and therefore prevent it from catching on the cone. Better knitting tension and fewer yarn breaks result.

A framework consisting of a slotted metal base and a metal ring is used to hold the cotton threads in place. One of the lighter metals (aluminum, magnesium, etc.) should be used for making the framework. The ring should be well polished so that there are no burrs on it that might damage the knitting yarn in case the yarn comes in contact with it.

To make the frame base, use a metal disk with a diameter about ¾ in. greater than the outside diameter of the base of a fully wound cone of yarn. Cut 12 radial slots in this disk, as shown in sketch *B*. The slots should begin about ¼ in. from the edge of the disk. They should extend ¼ or ½ in. beyond (toward the center of the disk) the point where an empty cone would rest if one were placed on the disk. Drill a hole in the center of the disk so that the disk can be placed over the feed spindle.

Shape a wooden locator piece similar to the "cone locator" shown in the sketch. This locator should be fastened firmly to the metal disk, as shown, with flat-head screws. The purpose of the locator is to support the cone so that it is held steady at the center of its base. A spindle hole must be bored in the center of the wooden locator to correspond with the spindle hole in the metal disk.

The metal ring should be of about the same diameter as the base disk. It must not be smaller but would work




***YARN CATCHING ON CONE** can be prevented by cotton threads arranged to bear against the base of the wound cone, as shown here. Weights on the threads keep them against the cone until unwinding is completed.*

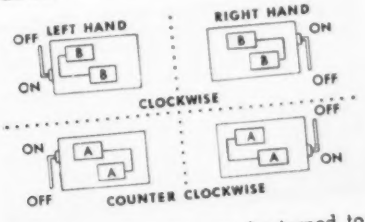
# *New* SHIPPER ROD SWITCH

Compact CLASS 9002 TYPE K shipper rod switch has die cast enclosure with conduit openings at each end

**Built to Meet TEXTILE INDUSTRY Requirements**

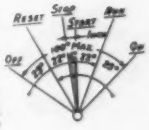
## No other design has all these features necessary to fully meet Textile Industry requirements!

**Four Operating Positions** are possible with a single device—operating arm is symmetrical with respect to travel and location . . . two sets of connections are provided on each contact mechanism. One device meets all installation requirements.




**Slotted Operating Arm** can be turned to any angular position on shaft and provides for necessary linkage adjustment to give correct "throw."

**Operating Arm Travel** is ideal for operator convenience and safety. Only 6° movement is required for "doffing." Contact overlap between INCH and RUN positions is adequate to insure closing of the starter maintaining circuit. Overtravel provided at each end prevents "creeping" shipper rod from affecting operation.




**Self-Contained Contact Mechanism** is snap action, easily wired, readily replaced in the field. Simple operating mechanism with alloy leaf springs separate from contact blade...Stainless steel compression-return spring . . . Husky case of highly arc-resistant melamine . . . Separate N.O. and N.C. circuits with double-break silver contacts . . . Four No. 6-32 binderhead terminal screws.

*Write* for Bulletin 9002 K. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

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all right if it were a little larger in diameter than the disk. A ring about ¼ in. in thickness is satisfactory.

Around the ring, at points to correspond with the slots in the base, drill 12 vertical holes for the cotton threads to pass through. Cut three small metal rods of proper lengths to support the ring about two-thirds of the way from the base of the cone to the top of it, and weld these rods to the metal-disk base and the ring. The rods should be spaced at equal distances around the disk and ring so that they form well-placed legs to support the ring.

The frame is now ready for use.

Place the disk base over the feed spindle with the wooden cone locator up. Tie one end of a cotton thread to the spindle at a point below the disk. Pass the other end of the thread up through one of the slots in the disk and through the corresponding hole in the metal ring. Now tie a small weight (a washer will do) to the end of the cotton thread and let the weight hang by the thread.

Tie other threads to the spindle in the same manner until all twelve of the slots and ring holes are in use. Then place a cone of yarn on the feed spindle and start it up on the machine.

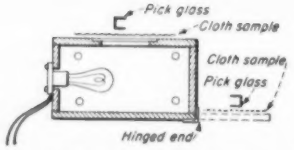
As the cone unwinds, becoming smaller in diameter, the weights on the ends of the cotton threads lower. This keeps the cotton threads bearing against the cone at all times during the unwinding. (*K-1056*) *Eric Brown, New South Wales, Australia.*

## Light Bulb in Box Aids Counting of Picks

Analyzing a sample of napped cloth is often a tedious job. Since the napping machine partially destroys the warp and filling yarns, it is hard to get an accurate construction count with a pick glass and light on the surface of the fabric.

The light arrangement shown in the accompanying sketch is particularly useful for counting the ends in napped cloth. It is a help also in counting other high-count constructions. It derives its advantage from the fact that light is thrown on the lower side of the cloth and shows up the warp and filling threads better than surface light will do.

It consists of a small box having one end hinged, a light-bulb socket, and a 3-in. square of frosted glass or glass painted white. The cloth sample is placed over the square of the glass, and the light turned on. The pick glass is set on top of the cloth sample.




***COUNTING PICKS** or warp ends in a sample of napped cloth or a high-count cloth is aided by a light arranged as shown here. Bottom light can be obtained on the sample by placing the sample on the frosted glass in the top of the box. Surface light can be thrown on the sample by opening the hinged end of the box and placing the sample on it.*

Good surface light can be thrown on a sample to be inspected or counted by dropping the hinged end of the box. Place the sample on the lowered box end, as shown in broken lines in the sketch.

It is a good idea to bore ventilation holes in the sides of the box and also paint the inside of the box with aluminum paint. (*K-1044*) *Albert W. Freeman, Ontario, Canada.*

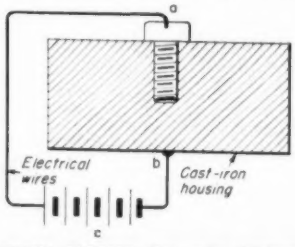
## Heat and Penetrating Oil Free Frozen Bolt Threads

When the threads of a bolt and nut get "frozen together" it is often hard to remove the nut without damaging it or the bolt, or both. The solution, of course, is to get a lubricant between the threads.

Penetrating oil is excellent for lubricating such threads, but occasionally the slight etching action of vinegar is valuable. For either of these liquids to be effective, it is necessary to give them plenty of time to penetrate between the threads. Often, as long as 24 hr. is required for sufficient penetration to break the frozen threads.

The best method I've found for applying pentrating oil or vinegar is to place absorbent cotton around the threads and keeping it soaked with the liquid.

In cases where it can be applied, heat generated by a low-voltage current will speed penetration. A wiring diagram for use in this type of heating is shown in the accompanying sketch. Wire *a* is attached to the bolt to be removed. Wire *b* is attached to the block to which the bolt is frozen. (If the frozen threads are on a nut and bolt, attach one wire to the nut and the other to the bolt.)

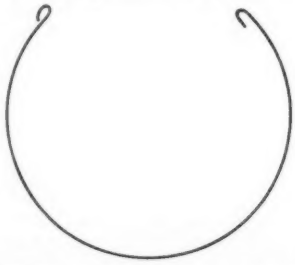



***FROZEN THREADS** that resist lubricant penetration can often be freed by low-voltage heat. Wire nut a and housing b to battery leads c.*

Both wires lead to a low-voltage battery. Current passing through the block and bolt will find poor conductivity at the threads; heat will be generated at that point.

This method of heating, used with the soaking method of lubrication, will usually free the most stubborn screwed connection. (*K-1054*) *W. E. Warner, Essex, England*

## Hooked Ends of Wire Aid Tying Back Warp Ends



***PUTTING IN A TIE-BACK** on a full warp can be done easily with a wire similar to the one shown here. Use a piece of wire that's long enough to reach around a full warp. Bend it in a circular shape, and bend a closed hook at one end and an open hook at the other end.*

*Tie the yarn end that is to be tied to the warp to the closed hook on the wire. Work the wire around the full warp. Then hook the yarn end coming off the warp in the open hook of the wire. Break the yarn loose from the closed hook and tie it to the yarn in the open hook. Remove the wire.* (K-1048) Peter Sterk, Janesville, Wis.

## Air Gap Around Armature Checked With Bright Light

An out-of-balance transmitter from an electric motor to a driven load is often the cause of production troubles. Some off-balance is due to wear and is unavoidable; but if it becomes serious enough to cause the armature to have an eccentric rotation, the magnetic pull at different points of the armature circumference is not the same. The result may be a lowering of the load capacity of the motor.

Such trouble occurs, of course, only in plain-bearing motors, where dirt can accumulate in a bearing and cause excessive wear.

It is good practice to check plain-

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bearing motors periodically to avoid off-balance running. The method commonly used for such checking is to insert long feelers into the air gap between the armature and the pole pieces.

Usually, this method gives a fairly good check on the extent of bearing wear; but it is not always dependable because the checking must be done while the motor is stopped. The clearance may not be maintained when the motor is running.

A good way to find out if the armature is running true is to shine a light on one end of the air gaps and look through the gap from the other end. If the armature is not running true, the off-balance wobble can be seen at once.

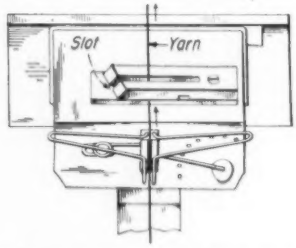
If the motor has a fixed end plate so that the light cannot be shone directly on the air gap, it should be possible to see the width of the air gap by shining a bright light on the air vents in the plate. *(K-1055)* W. E. Warner, Essex, England

## Double Slub Catcher Gives Cleaner Yarn

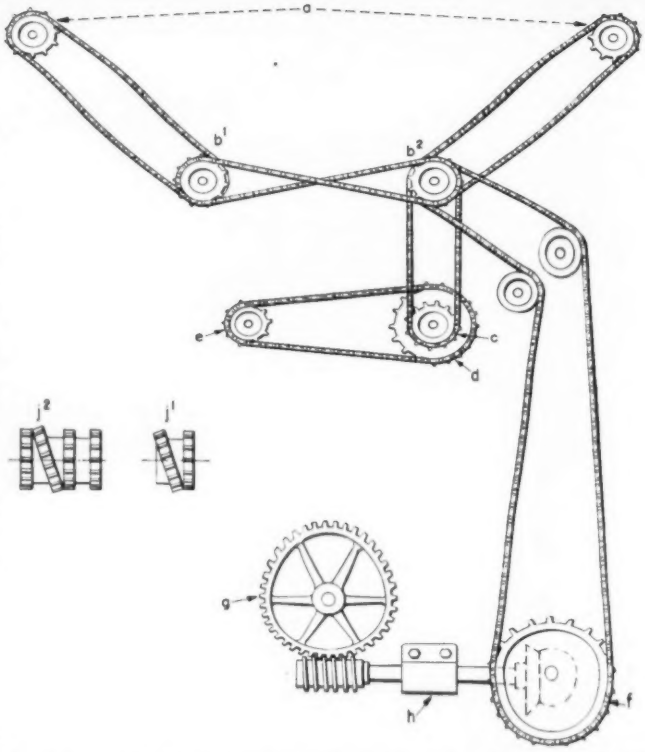
The slub catcher on the individual-end unit of the Abbott automatic winder can be made much more effective by the slot and thread-up shown in the accompanying sketch.

A slot is cut through the center of the yarn guide, as shown by the arrow in the sketch. The yarn end is run under the lower edge of the guide and up through the slot. When the yarn is running, it drags across two plate edges instead of one.

I have made many checks on the effectiveness of this thread-up and have found that it is a help to the operator and makes cleaner yarn. *(K-973)* J. B. Boyter, Fitzgerald, Ga.




***CLEANER YARN** can be obtained on the Abbott automatic winder by cutting a slot in the yarn guide and threading up the end as shown here. The yarn pulls over two slub-catching edges instead of one.*




***SPROCKET-CHAIN DRIVE** for a spinning frame can be arranged as shown here. Only cam gear g and its worm remain unchanged. A quieter, more constant drive is obtained.*

## Spinning Frame Driven By Gears and Chains

Less noise and a more constant drive can be obtained on a spinning frame by changing the gear drive to a chain drive, as shown in the accompanying sketch. Only two or three major changes must be made, except for replacing present gears with sprocket gears and chains. The present cam gear (g in the sketch) and the present worm gear remain.

The gears, as lettered in the sketch, are:

a—front rolls
*b*—intermediate
c—twist
*d*—jack
e—cylinder
f—lay
g—cam gear

Sprockets $j^1$ (used for $b^1$) and $j^2$ (used for $b^2$) each has a row of teeth off center, as shown in the sketch, so that the chain can be crossed without the sides rubbing. *(K-1058)* H. J. Cabaniss, Sylacauga, Ala.

## Loom Center Stop Motion Has an Automatic Guard

An automatic guard for the center stop motion of a C&K loom can be made as shown in the accompanying sketch.

As it appears in the sketch, the guard is in the position it would assume if the loom were stopped with the lay back. The short lever g on shipper rod 2 has thrown guard *b* up into action, and lock e (which works as a pendulum on screw f) has fallen into position to lock guard *b*. Guard b pivots on screw e.

When the loom is started up, lever g releases guard *b*, but the guard remains in the position shown until protection rod *1* strikes lock c at *1'*. The last ½ in. of the lay sweep is enough to unlock guard *b* and permit it to drop.

The beveled end of guard *b*, as it passes *c'*, carries lock c away from protection rod *1* to prevent it from rattling against the rod.

Lock c should be flat and ⅛ in. thick over all its length except the last

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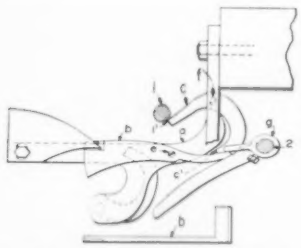
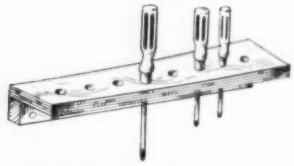


*A CENTER STOP-MOTION GUARD that works automatically through a weighted lever can be made as shown here. When the loom stops, shipper rod 2 causes lever g to throw guard b into stop-motion-guard position. Lock c holds b in place until the loom is started up, and the first stroke of the lay causes c to release b.*

inch at end c'. This inch should be ¼ in. thick.

The stroke of guard b is adjustable at the end opposite lever g by means of the block shown in the sketch. *(K-1061)* Walter A. Simond, Franklin, N. H.

## Screwdriver Rack
### Holds "Phillips-Head" Tools



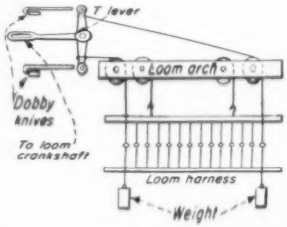
*A SCREWDRIVER RACK, made of 1x4-in. plywood fastened with screws to a 1x2-in. pine board, makes a convenient storage place for the many screwdrivers a fixer must use on "Phillips" screws. The rack can be fastened to the wall or to a side of a toolbox.* (K-968)

## Harness for Catch Cords Eliminated by Dobby Lever

Most basket weaves require the use of a catch cord on one side of the loom. In some cases, one is used on both sides of the loom. Usually, a skeleton harness is mounted in the loom to hold these threads. The device shown in the accompanying sketch can be used on looms equipped with dobby harness motions so that the skeleton harness is eliminated.

Select a lever, and peg the chain so that the dobby T lever will move opposite to the ground weave. The catch cords (one or two) can be led over pulleys bolted to the loom arch and tied to the dobby T lever as shown in the sketch. The shed of the cords can be closed or opened by tying the cords nearer to or farther from the center of the T lever.

This idea can be used also to prevent drawing in filling on a multiple-shuttle loom. For this purpose, peg the dobby chain so that a catch thread will lift the filling at the box side of the loom out of the way of the outgoing shuttle. *(K-1004)* Patrick Laming, Stirlingshire, Scotland




*CATCH CORDS can be worked from a dobby T lever instead of from a dummy harness frame. Just run the cords over pulleys bolted to the loom arch and tie them to a dobby lever that works opposite to the ground weave. Such a cord can also be used to lift box-side filling out of the way of a shuttle.*

## Holders Under Loom Warp Keep Wrapping Paper Clean

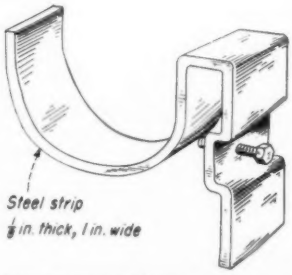
Weave rooms that receive warps wrapped with paper usually save the papers. Too often, these papers are dropped on the floor when the warps are unwrapped and get so soiled that they cannot be used again.

Most of this waste of wrapping paper can be avoided by providing convenient places for putting the papers when they are removed from the warps.

A good paper holder can be made and mounted at the place where it is needed most: on the loom directly under the warp.

Two lengths of ⅛x1-in. strap steel shaped as shown in the sketch make good holders. Bolt them to the back loom girder about 4 in. inside from the warp stands and 4 in. below the warp.

A pair of these straps will hold from five to ten wrapping papers. The weaver or warp man has plenty of time to take up the papers and put them in the can or other receptacle from which they are returned to the slasher room or other destination. *(K-1049)* John Falcone, Bangor, Pa.




*WARP WRAPPING PAPERS can be dropped onto a pair of these holders bolted to the back girder of the loom. The holders keep the papers from being dropped on the floor and ruined.*

## Elevator Frame on Winder Eliminates Manual Dumping

The yarn chute on an Abbott automatic winder is equipped with a metal yarn box. The doffer dumps yarn into the metal box and trips the electric hoist. The chute elevator raises the metal box and dumps the yarn into the machine.

The transfer of yarn from the doffer's box to the metal box involved lifting and dumping and also resulted in bobbins of yarn falling to the floor. We have eliminated these objectionable features by removing the metal box of the chute. In its place, we installed a metal frame into which the regular doff box can be placed. In this way, manual dumping by the doffer and scattered bobbins of yarn are avoided. The doffer merely takes his doff box off his truck, places it in the metal frame of the chute, and trips the hoist.

The frame can be made by welding lengths of angle iron or flat iron to form a rectangular framework with an open top and one open side. The open side is placed toward the outside so that the doffer can slide his doff box onto the frame with a minimum of lifting. The measurements of the frame should be controlled to fit the size of doff boxes in use in your particular mill.

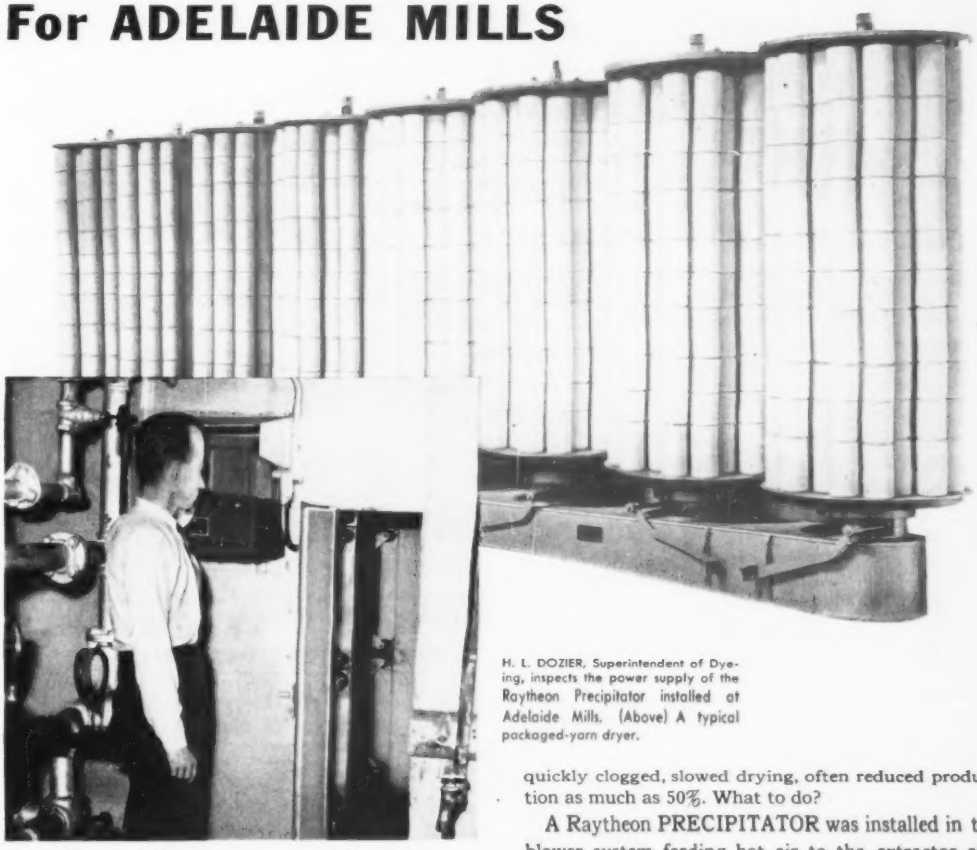
The lifting eyes and guide rollers used on the standard metal box can be removed and installed on the frame, or duplicate eyes and rollers can be made.

Across the top of the frame, a stop to prevent the doff box from falling into the chute should be added. A length of ⅜-in. steel rod can be used to make the stop.

(In some instances, it may be practicable to cut out a side of the standard metal chute box and use it instead of making a frame. In such a case, it would be necessary only to add the ⅜-in. rod across the top.) *(K-888)* J. B. Boyter, Fitzgerald, Ga.

# Now Package-Dyed Yarn Comes Clean

## For ADELAIDE MILLS



H. L. DOZIER, Superintendent of Dyeing, inspects the power supply of the Raytheon Precipitator installed at Adelaide Mills. (Above) A typical packaged-yarn dryer.

### *Raytheon Electronic Air Cleaning Solves A "Smog" Problem . .*

ANNISTON, ALA., is a busy town and its many factories burn soft coal. The resulting "smog," plus dirt and fly from the mill itself, created a problem for Adelaide Mills. Often as much as 5% of their yarn was spoiled by dirt in the air blown through packages during drying operations. They tried mechanical filters which quickly clogged, slowed drying, often reduced production as much as 50%. What to do?

A Raytheon PRECIPITATOR was installed in the blower system feeding hot air to the extractor and yarn dryers. Air flow is no longer restricted by clogged filters. Drying production has increased . . . *and no yarn is spoiled by dirt blown through the packages.*

Raytheon electronic air cleaning can be applied wherever airborne dirt is a problem. Precipitator units are available to handle a room, a department or an entire building. It will pay you to have complete, up-to-the-minute information. Write for it today.

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# Round Table

**FOR EXCHANGE OF IDEAS**—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

## A New Fixer Reports On the Night Shift

Cotton weave rooms are sometimes measured by the acre rather than by the number of looms, especially in the large Southern mills. During the war, I was night superintendent of one of such mills and made fairly regular rounds of the weave room in order to bolster the department supervisors' battle with inexperienced help. Many of the best fixers were in the service, and the overseer had considerable trouble with a few of the inexperienced fixers.

Since the supply room was located a good 8-min. walk from some fixers' looms, it was quite a problem to get spare parts when a loom broke down. Not only that, but many of the newer fixers tarried at the outside door for a smoke. With a great many fixers in the weave room, the overseer and the second hand spent most of their time writing supply-room orders and checking up on loom down time. To make matters worse, when one of the new fixers had an occasional use for a special tool or wrench, such as a set-screw wrench for swords, etc., he would extend his loom downtime further by canvassing the neighboring fixers for such a wrench or tool.

The result was that the weaving efficiency of the second and third shifts was four to five percentage points below the first shift. While the first-shift fixers had just as far to walk, they did not have a cover of darkness for smoking and did not lack for tools.

At the end of my first month with the company, I received a suggestion from one of second hands that I write an order to the first-shift shop crew for a "new" fixer. After some puzzling over this request, I found that the second hand had a drawing of what looked like a crude loom. He explained that this drawing was his new "fixer." He had sketched off the principal group units of the loom: cam shaft, harness roll and leathers, take up, parallel motion, and so on. He then told me that he proposed to build a wood frame to hold these parts in their approximately correct locations and to front this frame with a glass door that could be locked. He would then set this device near the center of the weave room and would require fixers to obtain their spare parts from this location and from him personally.

After some analysis, the idea was carried out; and the new "fixer" took his place in the center of the weave room holding not one, but two sets of principal spare parts as well as a set of special loom-fixer tools which, instead of appearing as tools "for loan," were announced as tools "for sale" to the first fixer that let himself run out of them. In a short time, all fixers had good tools; and though the new "fixer" did not bring the graveyard shift up to the first-shift efficiency, it was a great help. (*R-456, Greenville, S. C.*)

## For Carding Cashmere, An Idea From Scotland

I received from a friend of mine the November, 1948, issue of TEXTILE WORLD and was interested in the article on wool carding by Gustav Zellnik.

In reference to carding special lots of wool, and especially dehaired cashmere, we have tried several ways in which to make cashmere on a card. Our original idea for years was to put it through a 5-cylinder machine, consisting of 2-cylinder scribbler, ball and bank feed, 1-cylinder intermediate followed by a side draw and scotch feed, and 2-cylinder carder with ring doffer. The speeds of the cylinders were: scribbler 90 and 110 rpm., intermediate 100 rpm., carder 80 rpm. I experimented one day with a 2-cylinder

## TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

*"Mr. Jetsam here is going after a new broadcloth, a new finishing process, and a certain Miss DeLacey in the winding department!"*

MARCH · 1949

# CARD CLOTHING NEWS and views

WRITTEN MONTHLY BY E. A. SNAPE, JR. PRESIDENT, Benjamin Booth Company, PHILA., PA.

## Announcing A Flexible Card Clothing* That Cards With A Minimum Of Stripping

### *It's The Big News Of The Month For The Textile Industry*

I know of no greater "news" of current interest to the Textile Industry than the fact that now, for the first time, we have available a flexible clothing that runs with a minimum of stripping.

You have wanted this for a long, long time . . . and we at Booth have been working on it diligently, researching, testing, and experimenting.

Being new, you say, "Is it good?"

Frankly, it looks mighty good to us.

Over a year ago – 15 months to be exact – a carpet manufacturer agreed to an installation and running test in his plant. In short, the test proved the new card clothing ran an average of two to three weeks without stripping, instead of 24 to 48 hours with standard types of card clothing.

Now, you might say that isn't a test long enough to be conclusive. But carpet stock is *tough*, and when you consider the hard use to which the card clothing was subjected, I think you *will* agree the test was a success.

Thus, this revolutionary new Booth Card Clothing (we *do* consider it revolutionary because it is such a startling achievement) clicked from the start!

It means a definite saving to you through increased production, less stripping waste, and reduced operating costs.

You will hereafter know this new card clothing as "STRIP-O-MATIC."

*Pat. Applied For.

This is the first of a series of advertisements which Benjamin Booth will run in Textile World, informing the Textile Industry of new developments in a new card clothing, performance data, and sidelights of import. They will be authored by E. A. Snape, Jr., President,

**Benjamin Booth Company**

Thanks lots to those of you who have cooperated in the testing of this new card clothing, and to those we haven't personally visited yet, we shall do so soon to explain in detail the advantages of "STRIP-O-MATIC"; its performance possibilities, features and savings.

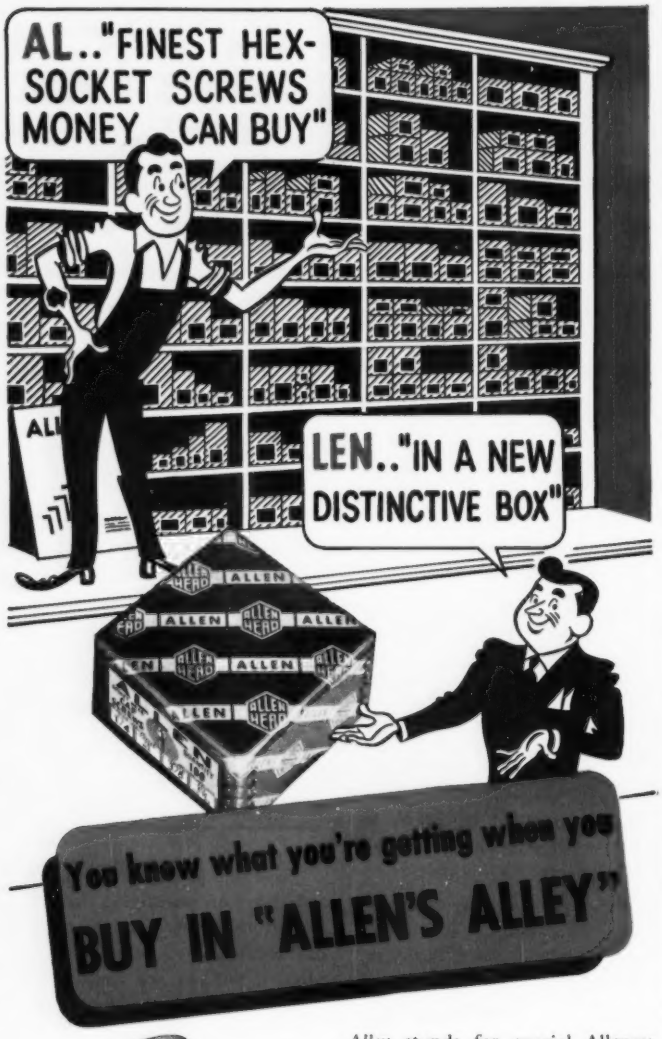
Meanwhile, the importance of card clothing is so great, we wish you'd contact us by letter or phone and we'll arrange a meeting!

How about it?

Thanks,

E. A. Snape Jr.

President, **Benjamin Booth Company**


AL.."FINEST HEX-SOCKET SCREWS MONEY CAN BUY"
LEN.."IN A NEW DISTINCTIVE BOX"
You know what you're getting when you
BUY IN "ALLEN'S ALLEY"

If the shelves in your distributor's hex-socket screw section display row on row of the new, distinctive black box with the silver bands, you know you're getting *genuine Allens*, not just Allen-type hex-socket cap and set screws.

*Allen* stands for special Allenoy steels, for complete facilities for threading by any method, for the latest forming and heat-treating techniques, for quality control, and advanced engineering. You get all these advantages in one package, if you make sure that package is the new black *Allen* package with the silver stripes.

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NEW YORK, CLEVELAND, DETROIT, CHICAGO, LOS ANGELES

## Round Table

(Continued)

carder by feeding the lattice board by hand and observing the results. I became confident that two cylinders were satisfactory.

We then obtained a 2-cylinder scribbler and split it into two parts. The 1-cylinder scribbler had side draw and scotch feed, and the carder had ring-doffer condenser. Cylinder speeds were the same on both parts, 80 rpm. We also covered the machine with very fine wire-clothing as follows:

Scribbler—cylinder 130/11, workers 130/11, doffer 135/11.

Carder—cylinder 140/12, workers 140/12, ring doffer 140/12.

We have gained the following advantages over the old system:

1. By reducing the number of cylinders and the speed to 80 rpm., we gained strength in the spun yarn which is vital in cashmere yarns.

2. The yield rose from 60-70% to approximately 100%, making a big difference in the cost of the wool.

3. Production was the same as before, but it could be increased if required.

4. We obtained a stronger roving, which enabled us to increase the spinning production on the mule.

The yarn is 31-cut, Galashiels system, which is condensed to 20-cut with 10% oil on 100 lb. of cashmere. Other wool blends take 13 to 14% oil.

We have tried this wool on tape condensers but have never found much success with it and have always turned it back on to the ring doffers which give a much lower production than the tape. We have put through several thousand pounds on this machine and have not had a complaint yet. I will be pleased to see further ideas on this subject in TEXTILE WORLD. (R-459, Selkirk, Scotland)

### Your Opinion of This May Tell How Old You Are

It's no secret that mill management will have to get used to older workers. Population trends move in that direction, with the average worker moving upward in the age bracket. These facts play a part in the mill problem of human relations. Job security becomes attractive to the slightly older man, while change and "promising" situations are the things that the younger workers seek.

Every worker grows old in years, but if more than a small percentage of them can be classed as "old" in attitude and efficiency, management has

# STEROX 5 and 6 NOW READY FOR TEXTILE MILLS

**Non-ionic-type Detergents and Wetting Agents High in Efficiency**

## PRICED FOR ECONOMY

**Polyoxyethylene Thioethers are Efficient Over Wide Ranges of pH and Heat**

**St. Louis, Mo.**—Sterox No. 5 and Sterox No. 6, two highly efficient, non-ionic detergents and wetting agents, are available to the textile and dyeing industries in quantity and at favorable prices, the Phosphate Division of Monsanto Chemical Company, St. Louis, announced today.

These clear, amber-colored detergents and wetting agents are polyoxyethylene thioethers which contain no alkali. They can be compounded with other non-ionic, an-ionic and cat-ionic surface active agents, improving many of the properties of materials to which they are added. Stable over wide ranges of pH and heat, the Steroxes are efficient in solutions that are hot or cold, hard or soft, acid or alkaline. In addition to being effective detergents and wetting agents, Sterox No. 5 and Sterox No. 6 are excellent for dispersion and emulsification.

Supplied in highly concentrated form, without builder salts, it is seldom necessary to use Sterox No. 5 or Sterox No. 6 in concentrations of more than 0.05%. This and the favorable prices make the Monsanto Steroxes economical to use. Being liquids, they are easier to apply with accuracy.

**Textile Manufacture**

Sterox No. 6 is a rapid wetter and is efficient and economical in any operation that requires a detergent or wetting agent. It is exceptionally good for scouring woolen skeins and piece goods. It is effective as a rewetting agent in Sanforizing and, left as a residue, it makes new towels more absorbent.

**Dyeing Processes**

Steroxes can be used with great success in dyeing and scouring operations. Being non-ionic, they are compatible with any type of dye bath used. Because of their penetrating ability, the Steroxes speed up dyeing operations and yield thorough, even color.

**Data and Samples**

Data and samples of Sterox No. 5 and Sterox No. 6 will be sent upon request. Use the coupon, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Desk C, Phosphate Division, 1780 S. Second Street, St. Louis 4, Mo.

**TRY THESE** efficient, economical detergents and wetting agents

**MAIL COUPON** for samples and data

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**DISTRICT SALES OFFICES:** New York, Philadelphia, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Portland, Ore. In Canada: Monsanto (Canada) Limited, Montreal.

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**NTO, CAL. GREENSBORO, N. C. SALISBURY, N. C. LEAKSVILLE, N.C.**

# MANUFACTURERS' BULLETINS

***A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.***

**Free FOR THE ASKING**

**1. Scales for many industrial uses** are pictured and thoroughly described in a brochure prepared by Yale & Towne Mfg. Co. Dormant and portable platform scales are featured along with counting scales, bench scales, and others.

**2. "Stripes and Plaids Pay** with Model SA and SA-ROF" is the title of a booklet describing the 4-color striper knitting machines now being built by Supreme Knitting Machine Co., Inc. Full-page photographs give detailed views of the 3-level unitary-pattern-wheel knitters for variable stripes, plaids, checks, and "floatless" designs.

**3. Paper pulleys** for proven power transmission are featured in a catalog issued by Rockwood Mfg. Co. Inc. Specifications of pulleys in stock take up four pages of the catalog.

**4. Pneumatic-conveying systems** for handling solid materials are described in a booklet prepared by Convair Corp. Illustrations of specific installations are given.

**5. Hot-stretching of nylon** cords is the subject of a recent bulletin for inclusion in Du Pont Nylon Technical Service Manual.

**6. "Flat leather belting** can give lower costs and increased earnings" is the claim made for its product by J. E. Rhoads & Sons in a recent folder which lists several advantages of Tannate belting.

**7. Ball-bearing units** for Saco-Lowell and Kitson hoppers feature cleanliness, labor savings, longer life, and lower costs according to a leaflet issued by Precision Gear & Machine Co.

**8. No more scrubbing** of floors is one result of the floor-maintenance system of G. H. Tennant Co. Three simple steps to better floors are illustrated.

**9. Any sewing to do?** You will be interested in a catalog prepared by Willcox & Gibbs Sewing Machine Co., which features machines for virtually all sewing operations.

**10. Many textile mills** are using glass blocks for improved daylight in building interiors, according to a catalog issued by American Structural Products Co. Several pictures of textile-mill installations are included along with technical information on design and uses of the blocks.

**11. Solid construction is best**—for ladders, golf clubs, and picker sticks—and solid loom bracing is far better too, according to a bulletin offered by Hunt Machine Works.

**12. If you are stuck** on sticking problems send for a booklet on the preparation and use of glues, pastes, and gums. It is published by National Adhesives and discusses seven types of glue.

**13. Cloth guiders** and batchers are featured in a bulletin issued by Winsor & Jerauld Mfg. Co. Applications and uses of each machine are listed and discussed.

**14. Wastage of steam,** waterlogging, and steam locking are discussed in a technical bulletin available from Sarco Co., Inc. There is also treatment of mechanical drying vs. steam drying.

**15. Industrial thermometers** and relative-humidity indicators are described and illustrated in a catalog issued by Weston Electrical Instrument Corp. Their electrical thermometer is also discussed.

**16. Complete slasher control** from size-cooking through size level and temperature, including cylinder temperature and moisture content, is outlined in a folder prepared by Barber-Colman Co.

**17. Air-conditioning equipment** of several types is pictured in a booklet from Buensod-Stacey, Inc. Typical installations are shown.

**18. Reinforced aluminum cores** for winding of paper are featured in a leaflet issued by Hubbard Spool Co. Strength, weight, and lower freight are listed as advantages of the cores.

**19. Flexible ball joints** for fluids, gases, and liquids where a flexible conveyor is required are described in a folder published by Barco Mfg. Co.

**20. Flow-rate indication** and flow-rate alarm can be accomplished inexpensively with its meters, according to a catalog issued by Fischer & Porter Co. Technical information on both meters is included.

**21. Dew-point recorders** and controllers are featured in a bulletin available from The Foxboro Co. A new system utilizing the "Dewcel" is described and its applications are given.

***MILL EXECUTIVES may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.***

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**32. An all-textile flashlight** called Flash-O-Lens is the subject of a folder prepared by E. W. Pike Co. It is an illuminated magnifier for textile inspection.

**33. A relay control unit** for laboratory work is featured in a leaflet issued by Palo-Myers Inc. The reverse side features a vacuum-blast-pressure pump.

**34. Stop that noise and vibration,** absorb impact shocks, and simplify machine installation with Isomode pads, according to a folder available from M B Mfg. Co., Inc.

**35. "Up and Over"** handling from floor to floor in a cotton mill is pictured and described in a recent issue of *The Swerling Column* published by American Monorail Co.

**36. All-stainless-steel bobbin board** and other similar units of equipment are illustrated in a folder offered by Johnson Engineering & Mfg. Co.

**37. A yarn-evenness tester** which utilizes electronic methods to measure cross-sectional variations in strands from card-sliver to yarn sizes is featured in a folder from Uster Corp.

**38. Wash fountains** made of enameled iron or stainless steel are described in a folder issued by Bradley Washfountain Co. Foot-operated and hand-operated models are listed.

**39. Precision textile winding** for uniformity in tension, density, and packages is the subject of a folder prepared by Walter Kidde & Co., Inc.

**30. "Adjusto-Speds,"** an a. c. motor having adjustable speed, is featured in a recent bulletin perpared by Louis Allis Co. There is a sectional view of the motor shown.

**31. You can have a quieter loom drive** with less shock and vibration by using the Tannate-Rockwood loom drive, according to a bulletin issued by J. E. Rhoads & Sons.

**32. Industrial air conditioning** and humidification is discussed in a recent folder from The Bahnson Co. Sections on its centrifugal humidifier and on the air-washer systems are included.

**33. Plastic sheaves** for C & K and Draper heads and for cam looms are pictured and described in a folder available from National Plastics, Inc. Advantages of self-spacing, self-lubricating, and self-ventilating are listed.

**34. Do you have hard water?** Allis-Chalmers Mfg. Co. has prepared an excellent folder on the operation of its new sodium-zeolite water softener. Diagrams, equations, and construction features are all included.

**35. Induction-hardened draft gears** which are said to eliminate tooth-warpage and eccentricity are described in a leaflet available from Precision Gear & Machine Co., Inc.

**36. A ball-bearing scutcher** for heavy-duty work is illustrated and described in a recent circular from Birch Bros., Inc.

**37. "The Best of Everything for Metallising"** is the title of a catalog of metallising equipment, accessories, and supplies which has been prepared by Metallising Engineering Co., Inc.

**38. A cot grinder** for smooth and rapid buffing of Dayco cots is the subject of a circular issued by The Dayton Rubber Co.

**39. Miniature ball bearings** for precision mechanisms are described in a folder issued by Miniature Precision Bearings, Inc. Radial, pivot, thrust, and angular-contact bearings are discussed.

**40. Physical and chemical properties** of Sulframin, Ultramin, and Ultrapone are given in a recent catalog from Ultra Chemical Works, Inc. Uses and methods of application of these and other products are given.

**41. A blending feeder** with automatic intake, improved cleaning grids, individual motor, and dust exhaust is featured in a folder published by A. P. Aldrich, Jr.

**42. The variable-V-planetary speed selestor** is the subject of a recent folder issued by Speed Selector, Inc. Dimensions, principles of operation, and horsepower and torque ratings are included.

**43. A speed-ratio tachometer** to indicate per cent stretch during sizing or to indicate shrinkage on Sanforized shrinkers is described in a folder prepared by Weston Electrical Instrument Corp.

**44. A parts catalog** of equipment for winders, spinning frames, looms, and many other units of textile machinery has been prepared by Kanoy & Sons Machine Co., Inc.

**45. "Modern Textile Roll Coverings** and Mill Supplies" is the title of a booklet prepared by Armstrong Cork Co. A 2-page spread shows a simple chart of roll-covering suggestions for various yarns and processes.

**46. Stainless piping systems** are illustrated and drawings, dimensions, and prices of new fittings and flanges are given in a bulletin issued by Taylor Forge & Pipe Works.

**47. One-shot lubrication** of twisters and spinning frames is outlined and discussed in an article released by Bijur Lubricating Corp.

**48. The fork-lift-truck "Operator's Guide"** has been revised and is now available from Towmotor Corp. Instructions for safe operation are included with operating suggestions.

## TO GET MORE INFORMATION

1. Fill out completely one space (name, title, company, address, and item number) *for each bulletin* wanted. Put only one number in each square.

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# LESTERSHIRE

*Aluminum*

# TWISTER BOBBINS

ADAPTABLE TO ANY STANDARD
RING TWISTER
LIGHT WEIGHT--RUGGED
--NON-CORROSIVE

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# Atlas Launder-Ometers

**used in testing of Detergents at Wyandotte Chemicals Corporation**

ATLAS Launder-Ometers, used to determine properties of detergency, color fastness, and resistance to washing and mechanical action, accurately reproduce washing conditions at accelerated speeds.

A typical application of the Launder-Ometer is a series of exhaustive tests conducted by the U. S. Army Quartermaster Corps and the Wyandotte Chemicals Corp. to determine the degree of sterilization and fading caused by various laundering and sterilization treatments of two selected types of Army fabrics — a cotton knit, and a 50% wool, 50% cotton knit. In these tests, the fabric samples were washed in a number of solutions containing chlorine-liberating germicidal agents, while mechanical action was simulated by 15 stainless steel balls introduced into each jar.

Results of these tests enabled the Quartermaster Corps to develop sterilization procedures for Army Mobile Laundry Units, and to obtain a fabric capable of withstanding rugged washing. In this, as in many other ways, testing in Atlas Launder-Ometers resulted in substantial savings and better materials.

New research model Launder-Ometers for accelerated testing of larger samples have recently been developed by Atlas. These units, with capacities ranging from 20 pint jars to 6 half-gallon containers, are now part of the complete line of standard Launder-Ometers.

**ATLAS ELECTRIC DEVICES CO.**

**361 W. SUPERIOR ST., CHICAGO 10, ILLINOIS**

***Originators and sole manufacturers of***

FADE-OMETERS • WEATHER-OMETERS • LAUNDER-OMETERS


## Round Table

(Continued)

failed in an important personnel task. Foremen who are suddenly surprised by the realization that certain workers have grown old on the job might well examine their own relationship with their workers. The problem of older workers should be prepared for long before "old" becomes a synonym for "hopeless."

It is easy to take care of this problem on jobs where a smaller load or lower production quota is sufficient to meet the older individual's needs for adjustment. But it requires tact. And the foreman capable of getting this idea across to older employees without hurting their pride or morale is worthy of management's encouragement.

Unfortunately, jobs with flexible ranges of production are not common. Management must always remember its investment in equipment, space, and other overhead expense. Production has to hit a level in these days that will bring the income above the break-even point. But, some provision for older men at the proper time is also good business, since it may be done in a way that will maintain mill profits and employee earnings.

After an employee is old in the literal sense of the word, little can be done toward making his remaining years useful. It is necessary to get to his case ten years ahead of that time. The mill should begin to prepare the employee while he is still (in his own mind, at least) young. The following simple program will help in this problem:

1. Teach the employee early to let the machines do the work. This conserves energy, reduces accidents.

2. Stress the formation of good habits and the planning of his work even when he seems to have energy to burn. Bad habits formed early in his mill career will prevent the best use of energy in later life.

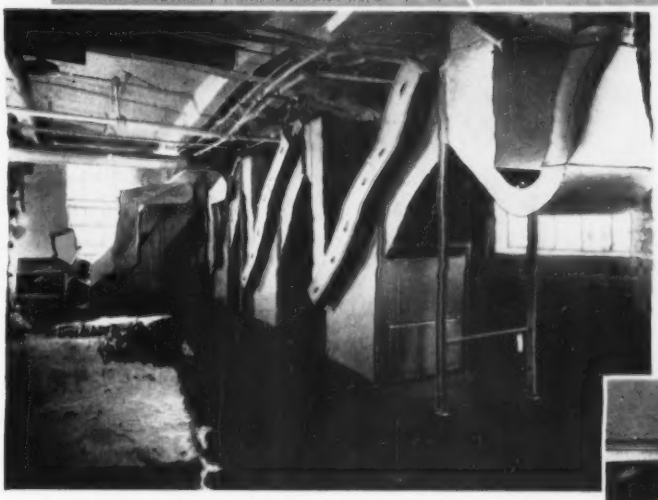
3. Emphasize his job security as long as he cooperates. Growing old is serious enough without added employment complications.

4. Give a word of praise and encouragement to those who are slowing up, for they feel the loss of power keenly.

5. Discuss his problem frankly, but privately, and considerately. He knows the problems of growing old (even as you some day may), and talking it over with the boss may ease his tension. (R-458, George M. Dodson, Harrisburg, Pa.)

# Now! A PERMANENT NON-ELECTRIC MAGNETIC PULLEY FOR AUTOMATIC TRAMP IRON REMOVAL

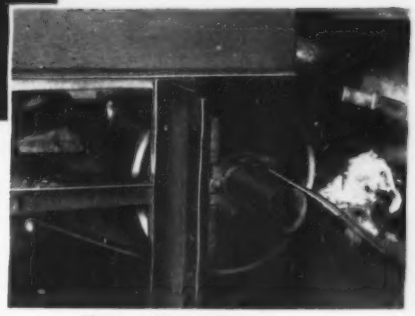
*Developed by Eriez*



ERIEZ Non-Electric Permanent Magnetic Pulley installed in opening room at Shuford Mills No. 2, Granite Falls, N. C.

**ERIEZ Permanent Non-Electric Pulleys gives you these Advantages.**

1. Automatic *Tramp Iron Removal.*
2. No Wiring for Electric Current Needed . . .
3. Cool Running . . . No Loss of Magnetism Through Heating Up
4. Not Affected by Moisture or Wet Materials.
5. No Operating Costs . . . First Cost is Last Cost.
6. Minimum Installation Cost.
7. Simple . . . Powerful . . . Permanently Magnetized.
8. *Uninterrupted Operation* . . . Top Efficiency Always.
9. Easily Installed in Original Equipment.



Close-up of Eriez Pulley in operation.

HERE'S the newest, most effective way to automatically remove tramp iron from textile fibers . . . Eriez Permanent Non-Electric Magnetic Pulleys ahead of opening and other processing equipment do away with tramp iron damage . . . Installed as a head pulley, the powerful magnetic field penetrates canvass or rubber belts, pulling iron out of your fibers and discharging it automatically. No manual cleaning is required.

Many mills, such as Shuford Mills (who use eight Eriez pulleys), find the installation of Eriez Magnetic protection a vital factor in recording savings on their cost sheet. Visualize these savings on your own cost sheet! No cost for operation or maintenance . . . the elimination of fires and subsequent cost in destroyed material and time lost in production shutdowns · · · the minimizing of expense for replacement parts and labor necessitated by damage to machinery caused from tramp iron . . . Yes, they really add up—and Eriez can quickly and effectively eliminate them. The cost is low—the savings great. *Write for complete information and recommendations today.*

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184 HIGH STREET, BOSTON 10, MASS.

Pioneer of PERMANENT Magnetic Separation

See our catalog
P 1b/2
SEE OUR CATALOG IN SWEET'S
Sweet's Processing Industries File

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Manhattan Felting Mills
48 Hamilton Ave.
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Belvidere, N. J.

Goodyear Clearwater Mills No. 2
Rockmart, Georgia

Firth Carpet Co.
Auburn, N. Y.

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Bladenboro, N. C.

American Hair and Felt Co.
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**501 East 12th St. • ERIE, PA.**

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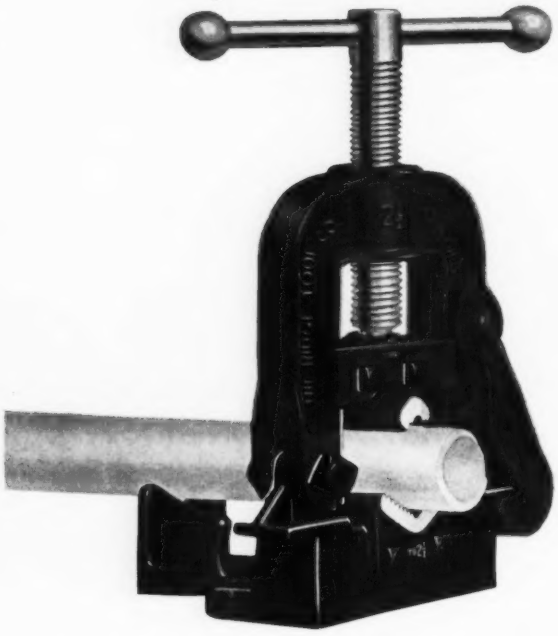

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● RIDGID bench vises make your work extra easy, fast, efficient. Integral pipe rests support pipe firmly. Handy built-in benders won't mar or flatten pipe. LonGrip jaws of heat-treated tool-steel have bulldog grip but are easy on polished pipe or tubing. 8 sizes for pipe to 6." RIDGID bench, post, stand and Tristand vises, yoke and chain types . . . give you more for your money. Buy them at your Supply House.

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WORK-SAVER PIPE TOOLS

THE RIDGE TOOL CO. • ELYRIA, OHIO

# Questions AND Answers

## Repeat Marks in Satin Caused by Construction

Technical Editor:

**' Will you please advise us how to avoid repeat marks in 8-shaft rayon satin? We are using a 3-count satin weave, skip-draft draw, 288 ends per inch in the warp, and 60 picks of 300-den. acetate filling. (9288)**

Changing the construction of this fabric may prevent repeat marks.

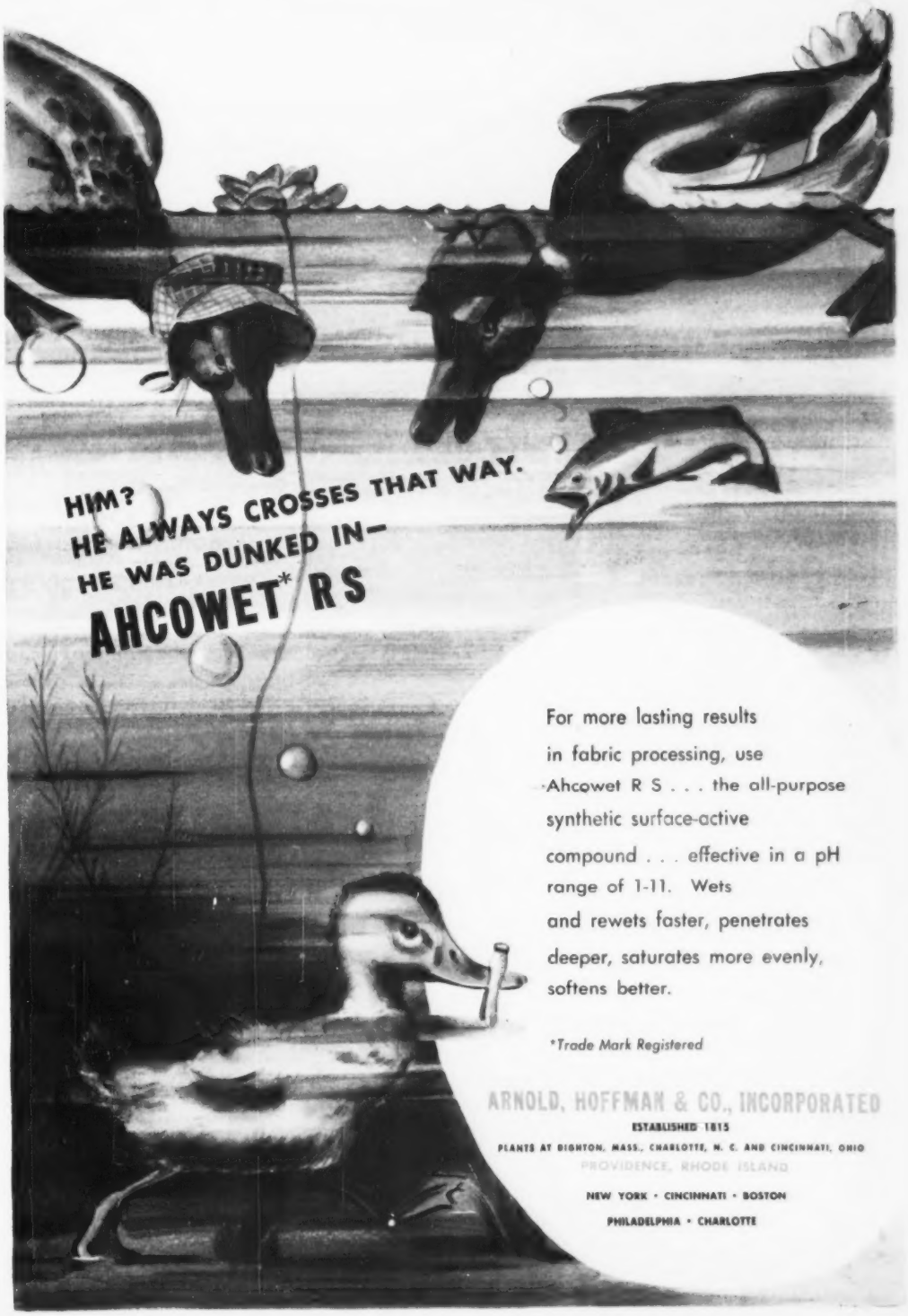
In satin weaves, the number of threads per inch in the warp and picks per inch of filling are very important. The warp threads should be placed as close together as their diameters will permit. In order to produce a fabric with a smooth, unbroken surface, the warp ends must be placed so close together that the filling intersections are completely covered.

Decreasing the number of picks per inch to offset the increase in warp ends may also help to correct this condition.

The heavier-denier yarns, of course, will give a more noticeable repeat mark than the finer-denier. The 8-shaft weave is a rather tricky number on rayon. It seems that you must be using a 36/8/1 count. As the reed openings would be the separations between pattern repeats, the chances for defects would be increased.

Some plants weaving this type of cloth use the 40/7/1 count on an 8-shaft draw. This count would give you 280 ends per inch and may be undesirable. As a possible solution, it would be better to use a 41/7/1 reed count, which would give you a warp count of 287 ends per inch on the 8-shaft draw. You would have 1-end-minus per inch, which would not be noticeable. It would be necessary to drop out the amount of warp ends during beaming to correspond with the reed width.

The 41/7/1 reed count will give you a nicer weave, as the entry repeat would be split so that a draft count would repeat on every eight dents in


HIM?
HE ALWAYS CROSSES THAT WAY.
HE WAS DUNKED IN—
AHCOWET* RS
For more lasting results in fabric processing, use Ahcowet R S . . . the all-purpose synthetic surface-active compound . . . effective in a pH range of 1-11. Wets and rewets faster, penetrates deeper, saturates more evenly, softens better.
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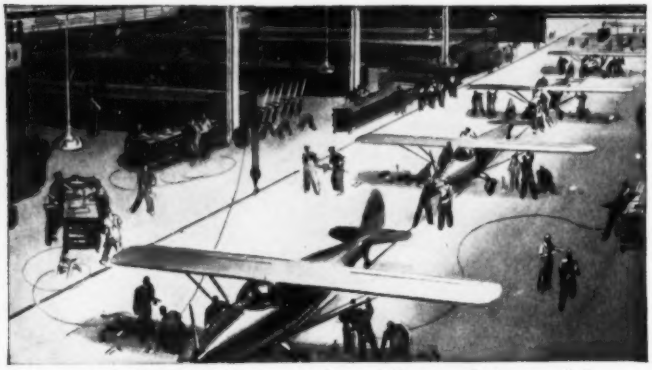

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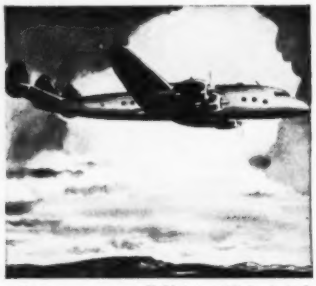

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## Questions and Answers

(Continued)

stead of every dent, as on the 8/1 reed count. If you do not have the 41-per-inch reeds but have a 40 reed on hand, try a few warps on the 40/7/1 count. This reeding should give you a smoother face.

Some mills prefer a straight draft count, as 1-4-7-2-5-8-3-6 on the pattern chain, counting from the back. With this draft and the 41/7/1 reed count, shaft repeat marks should be eliminated.

### Bathing-Suit Fabric Has Uneven Elasticity

Technical Editor:

**I have a small mill where I manufacture Lastex bathing apparel. The fabric, as you will note from the two samples inclosed, is more elastic in some places than in others. One of these samples is a satin weave, the other faille.**

**Can you explain why there are differences in elasticity? (9286)**

Uneven tension in these fabrics could be caused by a number of conditions. For example, the yarn could be unevenly twisted, and the elastic rubber could be of uneven tension. Age, as you know, will affect the elasticity of rubber. Different tension in winding or a bent or warped bobbin could also cause the trouble. A damaged reed could cause a streak of uneven tension running warpwise.

From the small samples, it was impossible to determine whether the fault went all the way across the fabric or only part way. If the fault runs the full width of the cloth, uneven weaving may be the cause of the defect. In this case, the let-off and take-up motions should be inspected.

### Loom-Performance Data Useful for Comparison

Technical Editor:

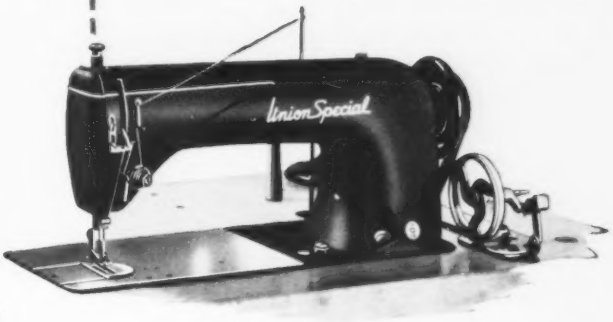
**Has there been any work done on establishing from style characteristics and cloth construction the number and type of end stoppages that may be expected in weaving on a cotton loom? We'd like to have any available information in respect to establishing a table or curve that would permit us to predict loom stoppage from known data of style, loom speed, etc. (9285)**

Most progressive textile mills have production engineers to make time and production studies of the particular fabrics being woven in the mills. Some mills will make these data available to interested organizations, and some will not.

It is extremely doubtful that collective data would serve a very useful purpose, since there are such wide

# THEY CUT COSTS in more ways than one...

## in this sewing machine




Here's a case history of a manufacturer who found that it pays to use magnesium!

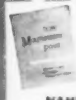
In this instance, a magnesium die casting was used for the needle thread take-up in an industrial sewing machine. The gains from using magnesium were two-fold.

First, it allowed the part to be cast to closer tolerances, requiring less finish machining, thus cutting production costs.

Of even greater importance was the second benefit resulting from the use of magnesium. Since this machine must be capable of accelerating to full speed in a fraction of a second, the needle thread take-up had to be of a lightweight material and one that resists fatigue. Tests proved that magnesium brings these two desired qualities to the part to give improved performance.

As in the case of this manufacturer, magnesium may hold the answer to lower production costs and improved performance in your product. Try it! You'll find there's a readily available source of magnesium.

# Magnesium IN MANY APPLICATIONS Pays



Write for this revealing free book "How Magnesium Pays". It's filled with actual case studies of how manufacturers of a wide range of products have found that magnesium pays.
Send me the study MP 49-34 "How Magnesium Pays."

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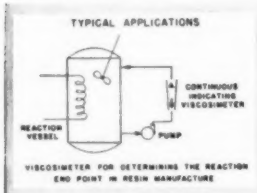


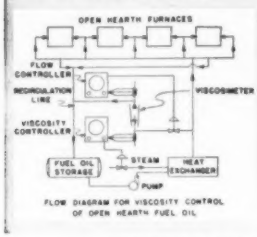


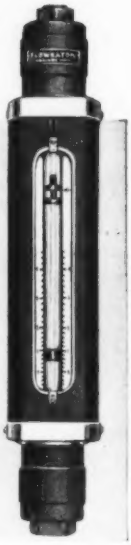

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**FLOWRATOR**
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## Questions AND Answers

(Continued)

variations between mills. The variations are caused, of course, by varied manufacturing conditions.

There are a number of textile-engineering firms that can supply average loom-production figures for any type of cotton fabric. Spinning-frame and loom manufacturers have exhaustive figures available on production, but these figures are based on ideal manufacturing conditions.

As good procedure as any for you to follow would be to obtain the figures you want from the machinery manufacturers or an engineering firm and use them as a basis for comparing results in your mill. Any figures you obtained from other sources—even other mills on the same types of goods—could be used only for comparison, since your manufacturing conditions would not duplicate those in any other mill.

### Speed of Extraction Depends on the Material

Technical Editor:

We are wondering whether we are using our extractors in the best manner and would appreciate any information on their proper use that might be available.

Our drying sequence is from the dyehouse operation to the extractors, then to our hot-air drying units. Our extractor operations leave from 50 to 60% moisture in our wool fabric and from 60 to 75% moisture in our cotton fabric—to be removed by hot-air drying. This moisture percent is based on dried weight. We believe that it is too high.

The fabrics extracted include wool, cotton, cotton-and-wool blends, and wool-cotton-rayon blends. The stockings and socks extracted are wool, cotton, wool-and-cotton blends, viscose rayon, nylon, and cuprammonium rayon. The yarns extracted are dyed worsted and cotton-and-worsted blends.

Our extractors are all 4 ft. in diameter and have an unloaded speed of approximately 700 rpm.

We do not fully understand the influence of different speeds, extraction time, methods of loading, condition and type of material, etc. (9287)

Increased basket speeds have a marked effect on the time required to extract most textile materials to a given moisture content. It is often possible to decrease the required extracting time up to 50% by the installation of a high-speed extractor. However, increased basket speeds have a relatively unimportant effect upon the lowest moisture content obtainable in a given textile material by centrifugal extraction.

Although moisture contents can be

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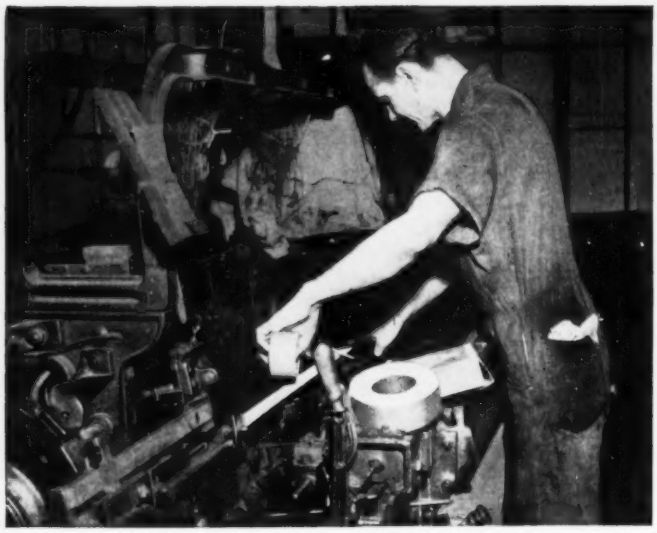

Race plate of loom being covered quickly with "SCOTCH" Textile Tape No. 400. Next, paper liner of tape is peeled off and felt pad pressed to the adhesive on that side giving perfect, smooth adhesion of felt to plate. Operation takes only a few seconds.

## Speed up change of race plate felt... use the tape with adhesive on both sides

Quick change of race plate felt is only another spot where "Scotch" Textile Tapes can speed your operations. Special "Scotch" Textile Tape No. 400 offers a strong adhesive on both sides of a tissue-thin paper—the ideal answer for this application.

This is only one of many new "Scotch" Textile Tapes—all of them built to textile industry specifications and engineered to save time and money. Write us today for complete information—or ask to have one of our tape engineers call. There's no obligation.

**Quick facts on "SCOTCH" Textile Tape No. 400 used to hold race plate felt**

- ECONOMICAL—cost of about 13c per loom is more than repaid by longer wear, labor-savings.
- CLEAN—no liquids, no drippings. Whisks off cleanly for replacement.
- SMOOTH—uniform adhesive grips both felt and race plate *evenly everywhere.*
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## Questions and Answers

(Continued)

reduced to some extent by high-speed equipment, the chief benefit derived from the use of such extractors is the greatly reduced extracting cycle and consequent increase in productive capacity of a particular-size extractor. For example, a 48-in. extractor with a 700-rpm. basket speed develops a centrifugal force approximately 325 times gravity, while a 48-in. extractor with a 1,000-rpm. basket speed develops a centrifugal force approximately 650 times gravity.

Although high centrifugal forces are ordinarily desirable when extracting cotton and woolen fabrics, rayon fabrics usually should not be extracted at a speed over 700 rpm. in a 48-in. basket because creases may be formed that cannot be completely eliminated in subsequent finishing operations. There is some possibility of creasing fine cotton fabrics, but it is not much of a problem.

The 50 to 60% moisture retention in wool fabrics mentioned and 60 to 75% moisture retention in cotton fabrics is about average for materials extracted in conventional extractors. These moisture contents could be reduced from 5 to 10% in a high-speed extractor, and the extracting time required could be reduced from 25 to 50%.

In extracting hosiery, cottons, woolens, and cotton-and-woolen blends require a relatively high basket speed and rather lengthy extracting cycle in order to prepare them properly (as regards moisture content) for boarding. Certain types of hosiery knitted wholly or partly from high-denier rayon definitely require high-speed extracting, as do cushion-sole cotton and woolen hose. Many hosiery mills find it necessary to air-dry such hose after extracting and before they are put on boarding forms.

Women's full-fashioned and circular-knit silk and nylon hose should not be extracted at basket speeds in excess of 750 rpm. in either a 40-in. or 60-in. extractor. The extracting cycle is very short, and great care must be taken in order to retain the proper amount of finish and avoid creasing. Women's rayon hose can be extracted longer and at higher speeds.

All skein-dyed yarns should be extracted in centrifugal extractors at high speeds. Extraction of such yarns is difficult at best, and moisture contents obtained are relatively high. Although package-dyed yarn wound on most any type of tube or spring is successfully extracted in centrifugal extractors, there is a definite trend toward air-drying of package-dyed yarns by means

# Learn these Definitions___

## *rayon*

A textile fiber made of *regenerated cellulose.* (Example: viscose.)

## *estron*

A textile fiber made of an *ester of cellulose.* (Example: cellulose acetate.)

● These separate and distinct names for the two major types of man-made fibers are recommended by the Committee on Textiles of the American Society for Testing Materials, the membership of which includes many leading manufacturers, distributors, and users of textile products.

Tennessee Eastman will follow the ASTM recommendation and identify its cellulose acetate fibers as *estron*, not rayon.

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## Questions and Answers

(Continued)

of pot dryers equipped with centrifugal blowers and heating elements.

Packages wound on springs are successfully extracted in extractors at high speeds, with little distortion to the package. However, all perforated-tube packages must have the tube filled with wooden plugs before extraction starts; even then there is a certain amount of distortion. This distortion usually disappears during the drying of the yarn, and winding can be accomplished with little difficulty.

It may be possible on your present extractors to decrease the moisture content by running the extraction cycle for a longer time. It is the usual custom to run a basket extractor until water ceases to run out of the outlet of the machine. Both the time and the speed of the extractor, as stated previously, depend upon the type of goods being extracted. It is doubtful that more than 10% more moisture could be removed, either at higher speeds or by a longer extraction time. You are already doing a reasonably good job on the fabrics you are handling.

### Sulphur-Stove Bleach Gives Uneven Finish

*Technical Editor:*

Can you tell us what are the latest developments in the United States in sulphurizing chambers for woolen hanks? As you know, the yarn is dyed, extracted, and exposed to sulphur vapors. In this country [Brazil], finishers generally use a common steel plate on which to burn the sulphur and leave the yarn exposed to the fumes in a brick building. The yarn hanks are suspended from bamboo sticks, and no forced circulation of the vapors is used. Naturally, the sulphurizing effect is not very uniform.

Is there any modern equipment available that makes it possible to obtain better combustion and better circulation of the fumes? We'd like to have equipment that would remove all the fumes before the chamber is opened and also some means for drying the sulphurized yarn before it is removed from the chamber. (9284)

Bleaching wool yarn is done in this country with hydrogen peroxide, rather than sulphur fumes as you described. Hank-dyeing machines for this purpose are available.

If for some reason sulphur bleaching is required, it would be done with a sulphur stove, as you do it. Unevenness will result in this type of bleaching if the skeins are not uniformly wet out before they are hung in the sulphur chamber.

Probably the best routine to follow would be: wet out, extract, expose to sulphur-stove fumes, extract, and dry.

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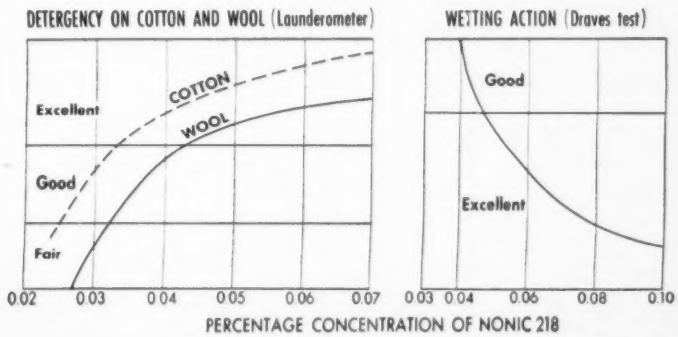


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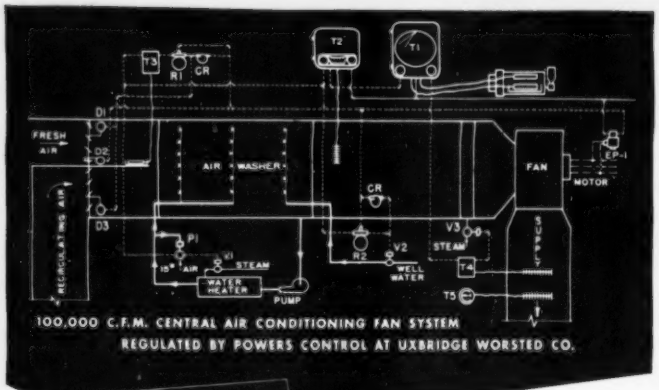

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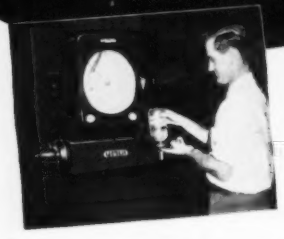

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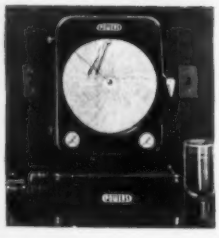
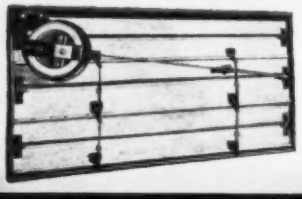


Above: T-3-4 Powers Type K Remote Bulb Thermostat.
Below: T-5 Powers Remote Bulb Dial Indicating Thermometer.



V-1-2-3 Powers Diaphragm Valve

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## Center-Fork Smashes

(Continued from page 131)

fork wires, improperly timed shuttle flight, and filling-fork adjustments incorrectly set or timed.

Gages are available for setting feeler-wire height to obtain proper clearance of the shuttle top. Draper's gage gives this clearance as approximately ¼ in. between the top of the front shuttle wall and the wires. If the gage is placed at a slight angle while the adjustment is made, this clearance will be incorrect. Also, if the shuttle size is changed for any reason, the gage setting will not bear up under actual weave-room needs.

One of the easiest methods for arriving at fork-wire height is to place the exact center of the shuttle under the fork wires with the lay at back center and the shuttle resting against a perfectly aligned reed, Fig. 1. The wires are then set to clear the shuttle wall as desired, after all other necessary adjustments have been rechecked so that the setting will remain positive.

The Crompton & Knowles center stop-motion adjusting rod used on S Model looms is shown in Fig. 2. The most common and practical method of raising or lowering fork-wire height on this stop motion is by turning the rod up or down. However, when this adjustment is disturbed, other points of adjustment will require checking.

**FEELER ADJUSTMENT.** If feeler wires are jammed tight in the up position with the lay at back center, the control rod will usually be too high. To lower it, unfasten the bottom adjustment and screw the rod down slightly until there is a small amount of play in the feeler wires. It may be impossible to lower the rod when the wires are jammed, since the crank may be forced too tight against the stop pin. In such a case, it is necessary to move the lay forward slightly and make adjustments. Recheck several times until free movement has been achieved.

With the crank forced against the stop pin and the fork wires jammed tight, the passing shuttle may strike under the wires; and vibration of the wires may cause a smash of several ends. By lowering the wires to clear the shuttle wall about ¼ in. and giving all parts a small amount of play, the chances for center-fork smashes are lessened.

When fork wires are too low and there is too much clearance between the crank and stop pin, it may be possible to raise the wires by turning up the control rod. If this adjustment can be made in this manner, it should

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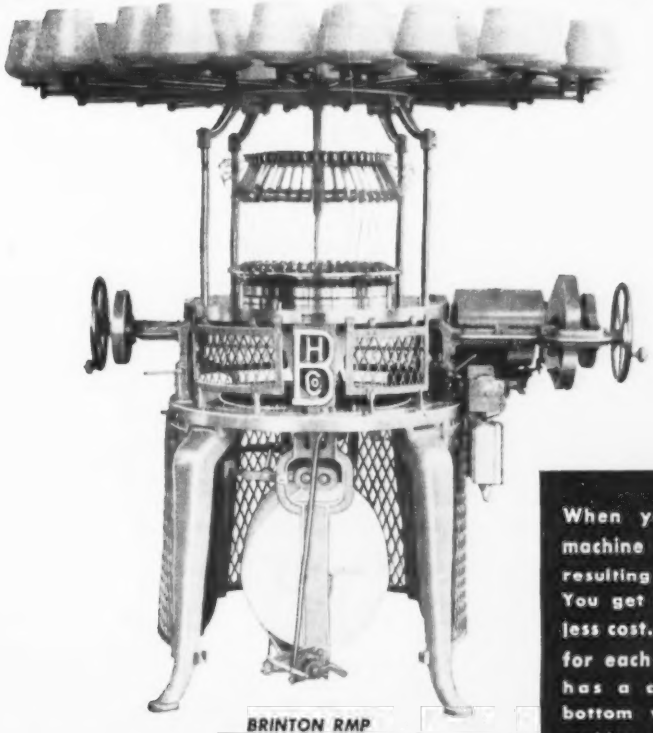

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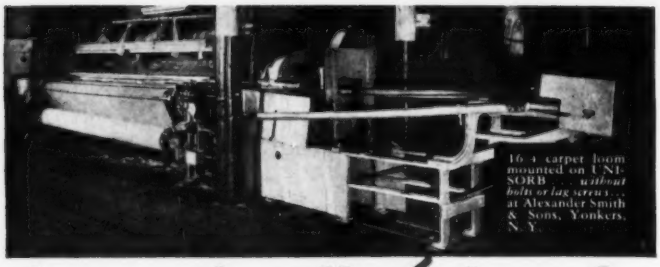

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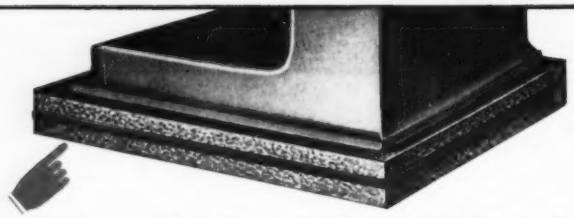

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be done before it is attempted to secure the raise with the short crank-adjusting rod. When wires are so low that the passing shuttle rubs the under edges of the fork wires, the quick throw of the shuttle will strike the wires sidewise, cutting out warp ends.

**TOO MUCH PLAY.** Too much freedom between the crank and stop pin is almost as bad as no freedom at all. Too much play will wear certain parts more than too little play. However, it is not the wearing of parts that is most costly. The thing that is most costly is repeated defects in the cloth. Parts can be replaced fairly reasonably; but before a part wears so badly that it needs replacing, it may cause cloth damage amounting to many times its value.

All center stop motions that work on the principle of feeler wires rising up through the cloth to permit the shuttle to pass and to place filling yarn beneath the wires are subject to small center smashes. Fixers should look for these defects constantly. At times, stop-motion adjustments may be neglected because trouble does not arise frequently or because the weaver is repairing single-end breaks without flagging the fixer.

The appearance of the front wall of the shuttle will often indicate coming trouble. If the front edge along the wall top is considerably roughened, grooved, or chipped, it may be striking against the fork wires. After the shuttle is sanded and polished, the fork-wire clearance, shuttle picking, and reed alignment should be carefully checked.

Vibration of the feeler wires is another indication that a loom is subject to small smashes. By standing away from the loom and watching the fork wires as the shuttle picks back and forth across the race, even at 180 ppm. or better, it is possible to detect any vibrating wires when they are struck by the passing shuttle. Particular attention should be given to the direction of the vibrating wires. When first struck, they will move in the direction of the shuttle flight and then swing back and forth, vibrating briefly before they drop down into the well.

**VIBRATION DAMAGE.** It is usually the first movement that cuts the ends. Instead of cutting the yarn on the first movement, the wires often chafe and cut warp ends on the second movement. In any case when vibration is occurring in the wires, it is safe to assume that damage to tender warp yarn is also occurring.

There may be possibilities that the filling center-fork motion is correctly

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No. 7 of a series.

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## HINTS ON CARBONIZATION AND NEUTRALIZATION OF WOOLEN CLOTH

A neutralization or slight acidification of woolen cloth in the washers after scouring, but prior to carbonizing, aids in overcoming unevenness caused by alkali migration. This does not eliminate all other causes of unevenness, however.

In woolen mills operating with this procedure, excellent results are being obtained. The finished cloth has a better "hand" or "feel" and is soft, rather than harsh and raspy as it is if carbonized and neutralized after dyeing.

Since the pre-acidification helps to eliminate resist marks and unevenness, there are fewer re-dyes.

The following procedure has been used with excellent results. After scouring, rinsing, and removal of rinse water, the cloth is treated in a fresh bath containing 3% Acetic Acid (28%) or 1% Formic Acid (80%) at 120° F. for about 20 minutes. This small amount of acid reduces the pH of the cloth from about 9 to a pH of 6.5 to 7. Such slightly acidified pieces, after the excess liquor has been extracted, show a marked improvement in the uniformity with which the carbonizing liquor is absorbed.

If the goods are to be dyed after carbonizing with level dyeing acid dyes or Calcofast* Wool dyes, only rinsing is necessary. On the other hand, if the goods are to be dyed meta or top chrome or if milling dies are to be used in the process, it is necessary to neutralize with soda ash, ammonia, sodium acetate, etc., prior to dyeing.

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Calcochrome* Alizarine Gray 2BLS is outstanding for its economy of application on wool, as a base for seasonable grays, and as a shading color

for buffs, tans and taupes. Ideal for automotive and upholstery fabrics—it's fast to light and water spotting. It is also good in union, acid or chrome formulations for apparel fabrics.

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### Calcosol* Navy Blue Paste

Calcosol Navy Blue Paste, a vat dye, produces shades of uniform tone in various depths of shade and heavy shades that retain their clarity without bronzing. Ideal for full, bright shades of vat navies exhibiting excellent fastness properties, especially to light, water-spotting, chlorine, it is also suitable for the usual methods of vat dye application on raw stock, yarn or piece goods.

A full range of navy shades from the red to the green cast can be produced by shading Calcosol Navy Blue Paste with Calcoloid* Blue BLN Double Paste, Calcosol Violet RR Extra Paste or Calcosol Jade Green N Double Paste.

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*The Practical Art Of Color Matching* (Calco Technical Bulletin No. 573)—by Wm. H. Peacock, Calco Technical Service Department. This bulletin has been in popular demand since its release several years ago.

*A Laboratory Study of Padding*, (Calco Technical Bulletin No. 808)—Part I: Cotton: by C. L. Zimmerman and G. L. Royer, Research Department.

One of the first scientific studies published concerning the principles of padding and liquid removal by squeeze rolls; covers some of the factors that control pick-up and preferential sorption of dye or dye solvent.

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... in a fast gray with excellent fastness and levelness ... that produces level shades even on yarn in skein or package form ... or when shaded with other vat dyes?

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set, timed, and otherwise adjusted; and small smashes still occur. In this case, the shuttle flight must be checked and corrected.

First, it is recommended that reed alignment be checked. Occasionally, a small dusting of wood or fiber from the shuttle back may have collected on the end of the reed or lay-sword plate. A washboard shuttle is not always a sign of an incorrectly aligned reed, but presence of dust is a sure sign that reed alignment is out.

With the reed aligned correctly, shuttle-box pitch and bottom box-plate settings should be checked. If the straight edge shows the proper set-up, the picker should be checked next. Worn pickers may be the cause of center "bust-outs."

**BOX CLEARANCE.** In eliminating box faults, a fixer may start a series of more troublesome imperfections. If the box front is moved out to allow more shuttle clearance, especially the right box front on the bobbin-changer, small center smashes often result. Too much clearance in the front will give the shuttle an erratic flight, and the fork wires will be struck repeatedly as the shuttle picks from that particular side.

Box-front clearance should approximate $\frac{1}{4}$ in. If it is more, too much spring tension or shuttle check may be required to box the shuttle, increasing the chances for center smashes. If the clearance is less than $\frac{1}{4}$ in., the shuttle may fail to go into the box satisfactorily, resulting in frequent bang-offs and in some cases will result in large smashes on the bobbin change.

On fast looms, there are guards on each side of the lay secured to the reed-hanger support or the lay-sword top to guide the shuttle into the box. These guards are covered with leather on the under side to prevent shuttle damage. They also prevent center-fork smashes if they are set to prevent a rising shuttle as it comes out of the box.

The guard should be lowered to within $\frac{1}{8}$ in. of the shuttle top. This setting keeps the shuttle down in its flight and lessens chances for the shuttle to strike the fork wires. However, if filling is cut on the bobbin as the loom runs, the guards should be raised $\frac{1}{16}$ in. higher.

Large smashes are to be expected infrequently, of course. When they occur, they throw a scare into the weaver, fixer, and other weave-room personnel; but they are not so destructive because they seldom occur, and the conditions that cause them are corrected before the loom is started up again. It is the small smashes that are more apt to cause a run of

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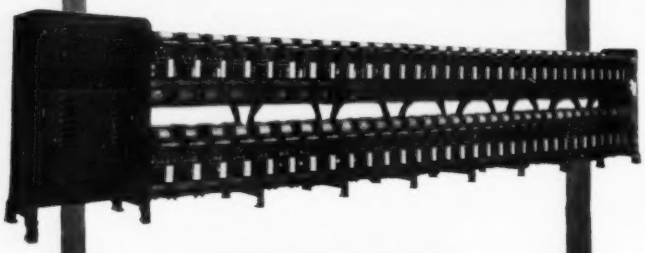

ACCURATELY TWISTS YARN INTO TAPERED OR STRAIGHT-END HEADLESS PACKAGES FROM 8-OZ. TO 32-OZ. IN SIZE!

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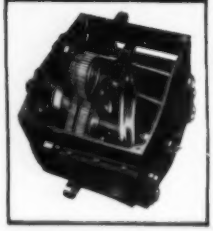

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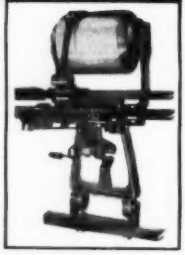

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substandard fabrics because little or improper attention may be given to conditions that cause them. Although they may be in the nature of "nuisance" defects, they can be all but eliminated by constant effort on the part of weavers and fixers.

## Card-Room Quality

(*Continued from page 135*)

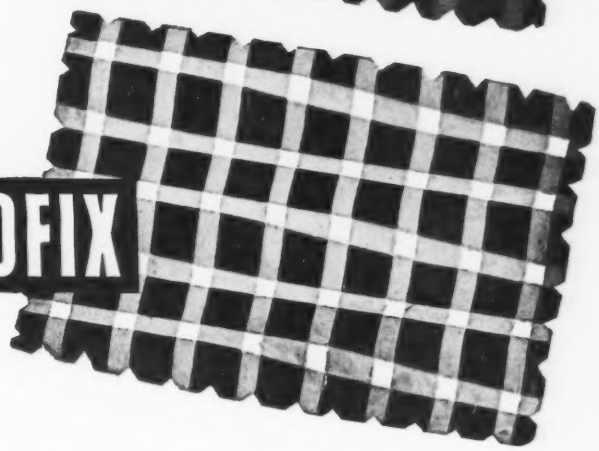
However, a modification of this practice has been adopted by some mills that have tested the relation of roving twist to yarn strength. On the basis of many tests, it was evident that increase of twist in roving not only reduced the amount of end breakage on the spinning frame but also increased the yarn strength. In some cases, the extra roving twist permitted a reduction of twist on the spinning frame without loss of yarn strength. The mill technicians believed that yarn-strength was added because of some effects of residual twist in the roving. These effects were not readily explained, but the results of the tests were conclusively demonstrated. One plausible explanation given was that the stretching point of roving in the spinning creel is reached long before the breaking point, and that the insertion of extra twist overcomes the stretch and adds to the strength and evenness of the yarn. It was suggested also that the added twist created better fiber control during drafting because of the restraint upon the fiber mass in the roving. Since various types of long-draft frames were used, it was impossible to gage every minute factor that entered the test. The main points of the tests, however, are worthy of investigation by mills that have or plan to purchase long-draft roving machinery.

Regular use of a Belger tester will aid the control of twist and tension, and permit standardization of twist at the points most beneficial to production, yarn strength, and quality. Since the charts from the Belger tester also indicate uneven drafting, the instrument can be used to check the factors in uniform drafting, such as condition and setting of rolls, etc.

For the convenience of card-room personnel, a list of possible causes of uneven roving, uneven tension, and imperfections may prove beneficial. Such a list is shown in Table I. The technical changes in one of the long draft installations which form the basis for many of the card-room practices here described are shown in Table II. This table offers a detailed comparison of technical factors before and after an installation of one type of long draft frame. The comparison appears

# STOP COLOR BLEEDING

# with *CULOFIX



**Preserve crisp detail and contrast** of prints by using time-tested Culofix as an after treatment.

**Kill bleeding troubles** no matter where they occur—in the finishing bath—batching up after dyeing—in cross dyeing, etc.

**Improve water fastness** of direct colors and impart a very desirable soft, full finish at the same time, thus eliminating an extra finishing operation. (Where no softening action is needed, Culofix L should be used.)

*If fastness to water or prevention of color migration is essential to your direct color dyeings, write for Technical Service Bulletin #204-106.1.*

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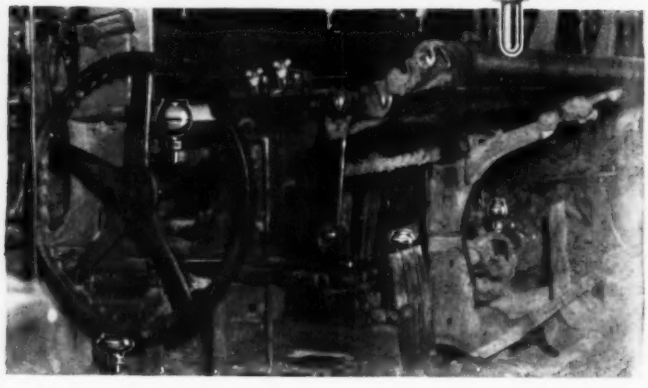
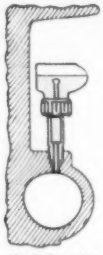
# LUNKENHEIMER BOTTLE OILERS

## Never Forget to Lubricate

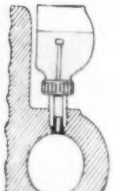
Fig. 1815
Globe Body

*In this South Carolina Mill, LUNKENHEIMER Bottle Oilers lubricate numerous looms. Note use of shallow body, Fig. 1816 Oiler, at lower left.*





No. 2 Fig. 1816
Flat Side Shallow Body Oiler



No. 3 Fig. 1816
Flat Side Body Oiler

**WITH Lunkenheimer Visible Bottle Oilers, you can see the level and be sure of dependable, more economical and trouble free lubrication of textile mill machinery. That's why many leading mills are equipping their machines with these work-saving lubricators.**

**These oilers automatically feed the right amount of oil, in the right place, at the right time. Oil waste, dangerous oil covered floors, damaged materials and time-wasting hand oiling are eliminated.**

**Efficient oiling, automatically provided by LUNKENHEIMER Bottle Oilers minimizes breakdowns and thereby cuts production costs. Write us, or ask your Lunkenheimer Distributor for Circular 560 describing Lunkenheimer Bottle Oilers.**

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to be a conservative one in view of the fact that the long-draft frame selected was not one of the higher-drafting units. The conversion to long-draft resulted in a large saving of floor space, maintenance, and labor costs. It substituted 1.25-hank single roving in the spinning for 3.00-hank double roving. It was attended by a thorough revamping and replacement of opening-through-drawing equipment which, though unnecessary in all mills, indicates that top-quality long-drafting roving depends on proper operation of preparatory processes as well as on that of the roving frame itself.

## Mill Temperature

(Continued from page 141)

should decrease. While this condition is significant, it should be noted that this rise does not begin for average subjects until the effective temperature exceeds 79° F., a condition well above the normally accepted summer comfort zone of 66° to 75° F. effective temperature.

2. The conclusion which can be drawn from the above fact is that, above the normally accepted comfort zone, the body can compensate for increased ambient-temperature conditions with no adverse physiological effect; and thus, presumably, be at full efficiency. For the average person, working at a metabolic rate of 549 Btu./hr., when a condition of 79° F.E.T. is equaled or exceeded, the metabolic rate and body temperature start to rise, and the body's physiological efficiency starts to decline.

3. The reduction in efficiency is progressive and increases with the length of exposure. At 85° F.E.T. and at the same rate of light work, after an 8-hr. exposure, the body temperature of the average subject could be expected to rise 0.75° F. The temperature of certain subjects would rise as much as 1.2° F. This rise in body temperature would not be expected to have a deleterious effect on the average worker in good physical condition and acclimated to conditions in hot industries. However, at 85° F.E.T., the average subject's physical efficiency has been materially reduced; and continued exposure to this condition might have more serious physical effect upon those persons not in the best condition. Therefore, 85° F.E.T. should be the limit of heat to which the average worker should be subjected for an 8-hr. shift without rest.

4. At 90° F.E.T., the body temperature of the average person will rise as much as 2° F. on relatively short exposure; and work under these conditions for periods longer than one hour would undoubtedly hazard seri-

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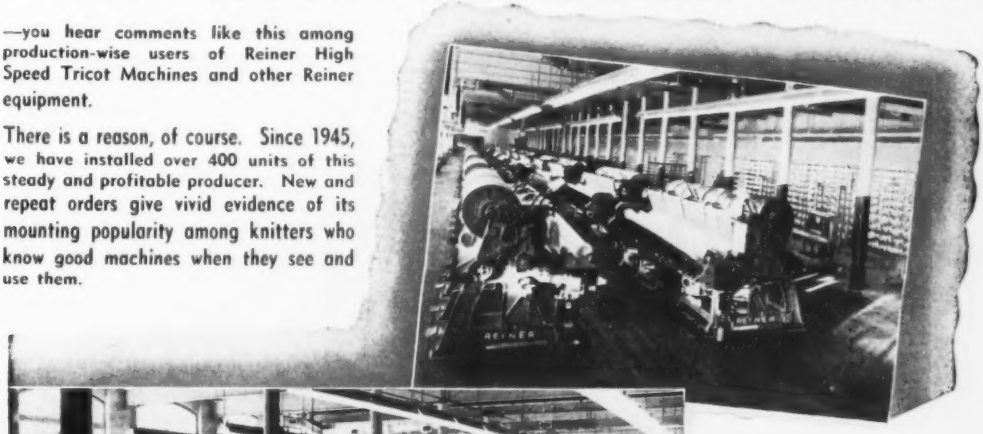
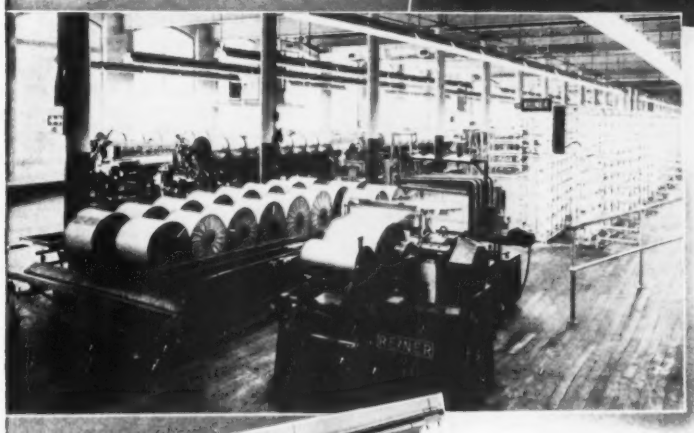
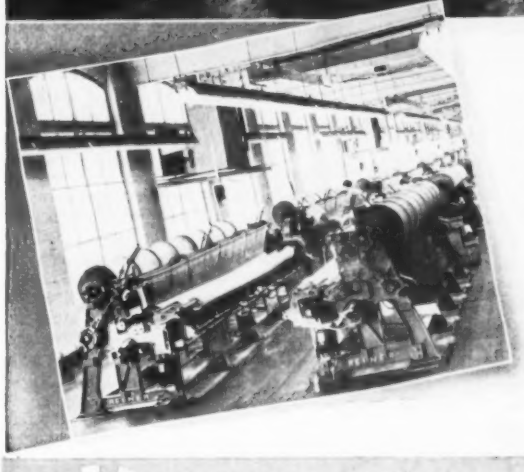
There is a reason, of course. Since 1945, we have installed over 400 units of this steady and profitable producer. New and repeat orders give vivid evidence of its mounting popularity among knitters who know good machines when they see and use them.







Photos courtesy
New Bedford Knitting Co.

The new Reiner High Speed Tricot Machine has a cruising speed in excess of 450 courses per minute, with a knitting width of 168 inches (or 84 inches with still higher speeds). It takes spools up to 21" warp flange diameter or of conventional size. It can be operated with either pattern wheel or a chain link drive. The change-over is a matter of minutes. This gives the knitter a selective pattern range of one bar or two bar tricot fabrics of rayon, nylon, silk, cotton, wool, etc., single-fibre or blended yarns. We also manufacture 3-bar machines. Gauges from 14 to 32.

**The Reiner Line also includes:**

a full line of preparatory equipment such as creels and warpers for all requirements, warping spools, hydraulic beam lift wagons, stop motion equipment, and auxiliary items, giving the knitter a continuous line from start to finish, all available from one source.

*Ask for our richly illustrated catalogs, or, better still, write to us for an appointment to see this High Speed Tricot Machine in action at our showrooms in Weehawken, New Jersey.*

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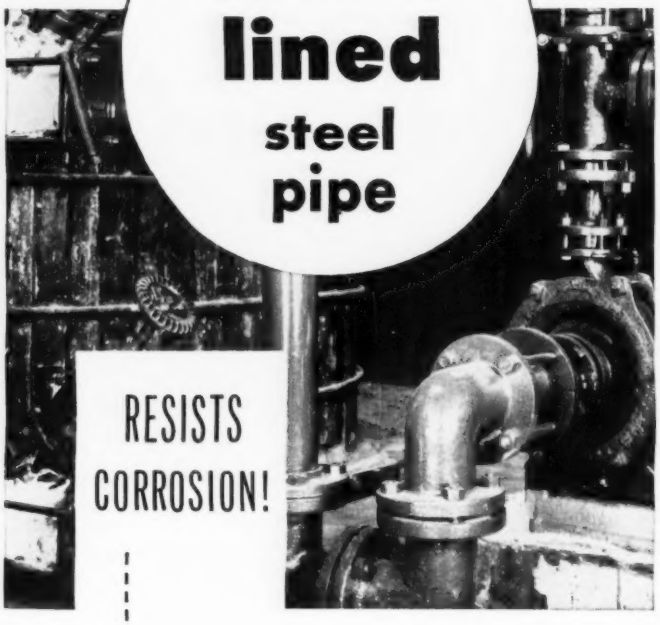
10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-2217.

# saran lined steel pipe



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Saran lined steel pipe is available in maximum lengths of 10 feet and in sizes from 1 to 4 inches inclusive.

Also available are saran lined plug valves, flanges, reducing flanges, flanged fittings, gaskets and fittings with union ends.

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ous effect on the health of the average worker.

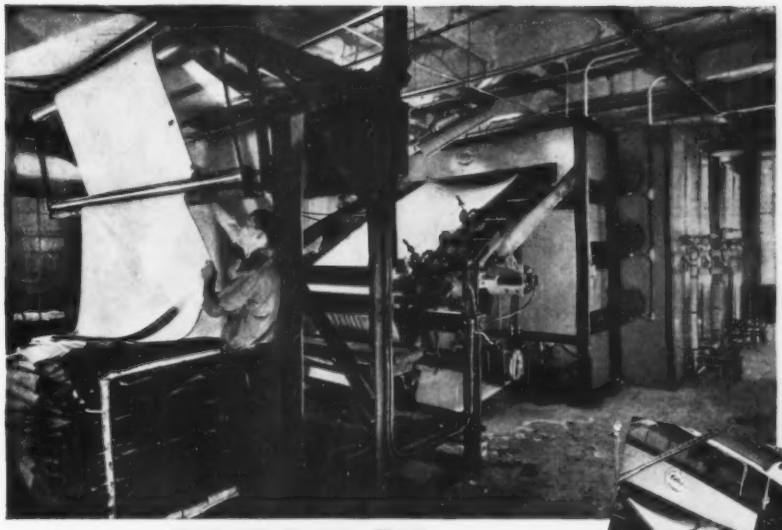
On the basis of these data, the following conclusions appear to be reasonable: (1) the effective temperature in a textile mill should not exceed 80° F. on an 8-hr. exposure for maximum efficiency of the worker; and (2) conditions of 85° F.E.T., or above, will not be injurious to the health of the average worker in good physical condition but could bring about undesirable physiological reactions in those below physical par. Furthermore, conditions at or above 85° F.E.T. undoubtedly result in serious impairment of physical or working efficiency of the average worker.

**TWUA REPORT.** The research department of the Textile Worker's Union of America, published a paper dated August, 1948, in which these same data were examined and which recommended maintaining 80° F.E.T. This recommendation was based upon the union's judgment that the worker's health would be injured when the effective temperature exceeded 80° F. The writer does not believe this stand can be justified by the data which was cited, as nothing was found presented in this literature to indicate that there would be any permanent injury to the health of the average worker at effective temperatures not exceeding 85° F. However, the writer does agree to this extent: that, for the maximum efficiency and reasonable comfort of workers, it is desirable to maintain an effective temperature not exceeding 80° F.

An effective temperature of 80° F. corresponds to a dry bulb of 86° F. and a relative humidity of 60%. A dry bulb of 80° F. with a relative humidity of 60% gives an effective temperature of 75° F.

Due to the high internal heat load and the fact that windows are eliminated in most modern textile mills, it makes relatively little difference percentage-wise in the gross refrigeration load whether the mill maintains 75° or 80° F.E.T. The tonnage of a given refrigeration system will increase slightly as the water temperature is increased, but the change is very small. The important consideration is the power required to drive the refrigeration compressor which is more directly affected by temperature and the number of hours and percent of maximum rated capacity at which it is necessary to run the machine. Both of these latter factors are related to the difference between inside maintained and average outside wet-bulb temperatures.

**EFFECT ON POWER USE.** With a straight evaporative-cooling system, an effective



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## HUNTER Uniflow Tenter Dryer

Rarely is a textile modernization program complete without the inclusion of modern Hunter preparation, drying, and wet finishing equipment. Uxbridge Worsted Company's program includes a Hunter Uniflow Tenter Dryer similar to the above illustration. This new Dryer handles menswear worsteds from 40-50 yards per minute with considerable savings in steam and labor. The unique patented air flow improves handle and assures even drying from side to side. This uniflow principle completely eliminates shady goods often encountered from radiant or reflected heat.

Check with any mill now using Hunter Uniflow. Then check with a Hunter field engineer to find out what *guaranteed* production you can get from this equipment on your own fabrics.

*Write for 12-page illustrated Bulletin UTD which gives complete construction and production details.*

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temperature of 80° F. (which is 86° F. dry bulb at 60% r.h.) can be maintained when the outdoor wet bulb is 71° F. or below or with the addition of refrigeration as necessary to maintain a 71° F. dewpoint temperature. With refrigeration, by using all outside air, as the wet bulb rises above 71° F., the loading on the refrigeration machine is merely the difference between the outside wet-bulb temperature and the maintained wet-bulb temperature or dewpoint at the apparatus which, in this case would be 71° F. When maintaining the aforementioned condition within the mill area, the wet bulb in this area is 75° F. When the outside wet bulb reaches this temperature or exceeds it, it is customary practice to close the outside air dampers and to operate with full recirculation. It may, therefore, be said that the maximum load on a refrigeration system is established by a 75° F. wet-bulb condition plus whatever allowance is made for leakage of higher wet-bulb air through the outside-air dampers. It can thus be seen that maximum loading on the refrigeration machine is not reached until an outside wet-bulb temperature of 75° F. is reached or exceeded.

To maintain 75° F.E.T. in the mill, i.e., 80° F. dry bulb at 60% r.h., would require an apparatus dewpoint or wet bulb of 65° F. Under these conditions, the final wet bulb maintained within the space would be approximately 69.5° F. With the operation, it can be seen that use of refrigeration is necessary whenever the outside wet-bulb temperature exceeds 65° F. and that 100% of the capacity of the refrigeration plant will be required whenever the outside wet bulb reaches or exceeds approximately 69.5° F. Thus, to effect approximately a 5° F. reduction in effective temperature within the mill area would require use of 100% of the capacity of the refrigeration plant well before it would be necessary even to start the refrigeration plant with the first-described operation. Those familiar with the trend of average outside summer wet-bulb temperatures for the Greenville, S. C., area can immediately see what a tremendous penalty in operating hours and increase in average capacity percentage would be imposed upon the plant by operation at the reduced effective temperature.

It should be recognized that the foregoing analysis is based upon straight air systems not employing any supplementary atomization. This simplified example is used because it graphically presents the penalty involved in the maintenance of reduced effective temperatures. The more customary approach in practical applica-

# PONTAMINE Fast Brown 8RL

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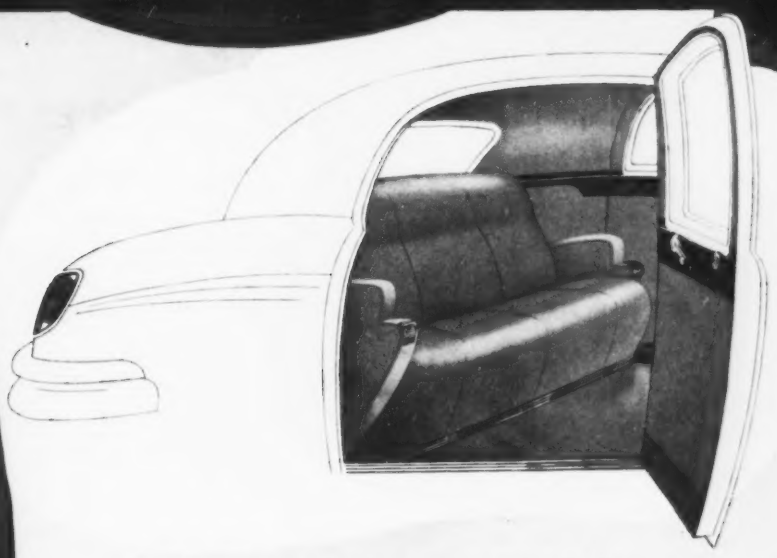

**Excellent** fast-to-light direct color for producing shades of bright reddish-brown on cotton and viscose-process rayon.

Good fastness to dry cleaning and dry crocking. Especially useful for deep brown shades on drapery and slip cover materials . . . recommended also as a reddening element for taupe shades on automotive upholstery.

Readily soluble, penetrates and levels well. Can be applied in the customary types of dyeing equipment. For additional information, consult our Technical Staff. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

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HERE'S A

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TO DO YOUR DRAINAGE JOBS BETTER FOR LESS MONEY!

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CLARK "60"

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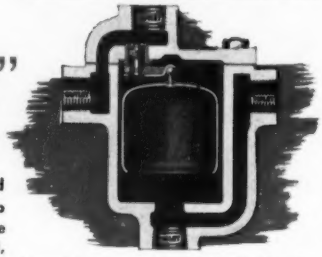

The ever increasing demand for the new CLARK "60" Steam Trap proves that Clark engineers "hit the jackpot" again on this one! It is small, costs less, yet it does a better job in more places than any other trap in its class!

The CLARK "60" is "the small trap with the big trap features" such as positive seating with guided disc. It is equipped with two inlets and two outlets for easy installation on horizontal or vertical lines.

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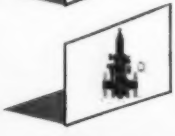
CLARK "70" STEAM TRAP

CLARK "70-T" STEAM TRAP

CLARK "80" STEAM TRAP



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tions is to use air systems with supplemental evaporation within the mill area. Benefits in reduced-system size and first cost dictate this procedure.

The technical evidence to the effect that 80° F.E.T. couples conditions of optimum worker efficiency with conditions of minimum practical operating costs leads to the continued recommendation that 80° F.E.T. be accepted and established as the criterion for the maintenance of textile mill interior conditions under summer conditions.

## Spinning Standards

(Continued from page 123)

tixes for spinners. Some engineers advocate and install piece rates and unit-system incentives for spinners on a hank basis with apparently good results. Other engineers claim that a rate per side or frame is satisfactory but that a rate per hank or side-hank is not practical in the spinning operations of their mill. A few engineers prefer a flat hourly rate with no extra-production incentive.

Those who oppose the hank-clock basis say that its production figure is too theoretical because it does not allow for the loss from ends-down. These engineers believe that the piece rate or unit-system incentive based on theoretical hank production is not feasible when ends-down vary considerably. They point out that the spinner may be pretty well "stuck up" while her frames continue to turn the hank clock.

The majority of the engineers favor the hank-clock basis for incentives. They attempt to provide for a fair number of ends-down in the standard and to establish a system of rechecking the running conditions of the job from time to time. They contend that the initial production increase obtained when incentives are placed upon the doffer-spinner combination more than offset the disadvantage of a slight variation in yard-hank ratio. They point out, too, that an incentive or piece rate is a form of standard costs. As such, it holds considerable advantage over the hour-rate method of payment.

**CONSIDER THE SPINNER.** From the standpoint of the engineer, the problem in standards for the spinner has been to measure and apply a variable work load against an admittedly theoretical production. From Jenny Spinner's standpoint, the problem has been to get a rate of pay that—if it cannot compensate her fully for her bad days—will at least compensate her well on her good ones. Without a periodic recheck of the job conditions,

# Rayon Reports

*Prepared Monthly by American Viscose Corporation, New York, N.Y.* MARCH, 1949

## New Cake Cover Now Printed for quick, positive identification

An indelibly printed disposable cake cover—hailed as the first "infallible" method of identifying rayon yarn—has been worked out by Avisco research men. All the information needed in processing rayon—denier, direction of twist, degree of luster and lacing notice, is discernable at a glance. Thus, the new cover will largely eliminate packing errors and the mix-ups which have complicated the problem of storage. In addition, it immediately signals "right side up"—an important factor in efficient winding.

The cover is printed with a special ink that is impervious to sulphuric acid, strong alkalis, bleach, gelatin and oils—as well as soaping, tinting and dyeing.

Since its introduction last summer, the disposable paper cover—an exclusive with American Viscose Corporation—has won widespread acceptance in the textile industry.

Users have commented favorably on the elimination of the 5-cent deposit required by the conventional knitted cover and the associated handling and bookkeeping required. Now, the addition of a printed label eliminates identification hazards.

The first Avisco rayon cakes with the new printed covers are expected to be shipped this month from the Roanoke, Virginia plant of American Viscose Corporation.

## *Avisco sponsors development of better use tests for rayon fabrics at Penn State College*

To develop laboratory tests which will accurately show what will happen to rayon fabrics when used, Avisco for six years has been supporting a research program at the Ellen H. Richards Institute of Pennsylvania State College. The work includes the development of accelerated aging tests for fabrics exposed to light, heat, humidity, atmospheric gases, perspiration, abrasion, laundering and dry and wet cleaning. Tests involving a combination of these agencies are also being devised. In addition, wearing tests are being run at the same time as a check on the accuracy of the trial laboratory tests.

Research workers at the Ellen H. Richards Institute have shown that many of the textile tests now in use—while they do screen the extremely bad fabrics from all others—have limited value in predicting what will happen in use. The purpose of the Institute's work is to develop laboratory tests sufficiently rigorous to simulate what happens to fabrics in the consumers' hands. The information resulting from these tests will aid in improving the construction of rayon fabrics and the finishes and dyes selected for them. The results of the Institute's work to date are available on request in pamphlet form.

## RAYON 20 YEARS AGO

NEW YORK, March, 1929—Rayon is entering another field. It is now possible to purchase rayon fabrics for upholstering automobiles.

MANCHESTER, ENGLAND, March, 1929—Exhibitors at the British Industries Fair are showing printed rayon hose—the latest English fashion.

NEW YORK, March 1929—Original designs intended for use on rayon fabrics are now being registered by the Design Registration Bureau of the Silk Association. Formerly only designs intended for costume silks were accepted.

**MAKE USE OF *Avisco* 4-PLY SERVICE**

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

**1** FIBER RESEARCH
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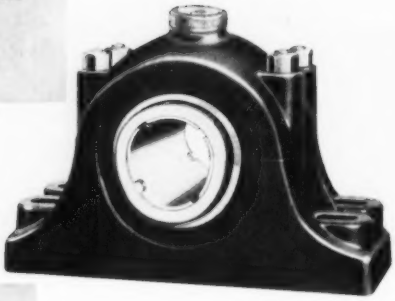

Mounted, sealed, housed, fully assembled, ready to lock on the shaft

Delivered from stock in 4 basic types and a vast range of sizes

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100-TON PULL

Three Dodge-Timken Pillow Blocks carry the load of a 100-ton pull of castings in and out of a shot blast chamber for the Falk Corporation, at Milwaukee. The bearings save the gear reducer from side pull and allow the shaft to turn easily even while taking the full load. Perfect operation for 8 years to date.

It was Dodge who took the famous Timken Bearing, mounted it, sealed it, housed it and delivered a pillow block of new high quality—fully assembled, ready to lock on the shaft and carry the power loads of industry with new efficiency.

Power savings, improved machine operation, reduced maintenance, elimination of spoilage and steadier production—all result so regularly from the application of Dodge-Timken Bearings that this great line is widely accepted as the standard for comparison in up-to-date power transmission layouts.

Ask the Transmissioneer, your local Dodge Distributor, how these bearings and other Dodge "firsts" can help you achieve better, more economical production.

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"SC" BALL BEARING Pillow Block with new Neoprene metallic-backed seal.

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CALL THE TRANSMISSIONEER. Look for the name of the Transmissioneer, your local Dodge distributor, under "Power Transmission Equipment" in your classified telephone directory.

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FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

her pay may not vary much from good days to bad.

While the problem may be far from completely solved, prospects for solution are better now than ever before. More thorough use of standards, machinery improvements, and a better understanding of methods and standards work are giving mills a more accurate control of manufacturing variables, including ends-down.

The trend affects Jenny Spinner in two ways:

1. It reduces her ends-down and work load.

2. It foretells other incentives that will increase her wages.

As the result of better equipment, improved methods, and closer control, one yarn mill reports a postwar record of 25 ends-down per thousand spindle hours. The mill makes 17s carded warp-twist yarn on long-draft equipment. The best prewar record at that mill was 48 ends-down per thousand spindle hours. Day-to-day variation has also improved. Time-study reports show a maximum variation now of 60%. Prewar time-study reports showed a maximum variation of 140% on the same number of yarn made from a comparative blend of cotton.

These records mean that the mill's best ends-down record now is 25 per thousand spindle hours and that its worst is 40 ends-down per thousand spindle hours. Formerly, the best was 48, and the worst was 115. All comparisons are stated in terms of an 8-hr. ends-down check and do not refer to hour-to-hour variations.

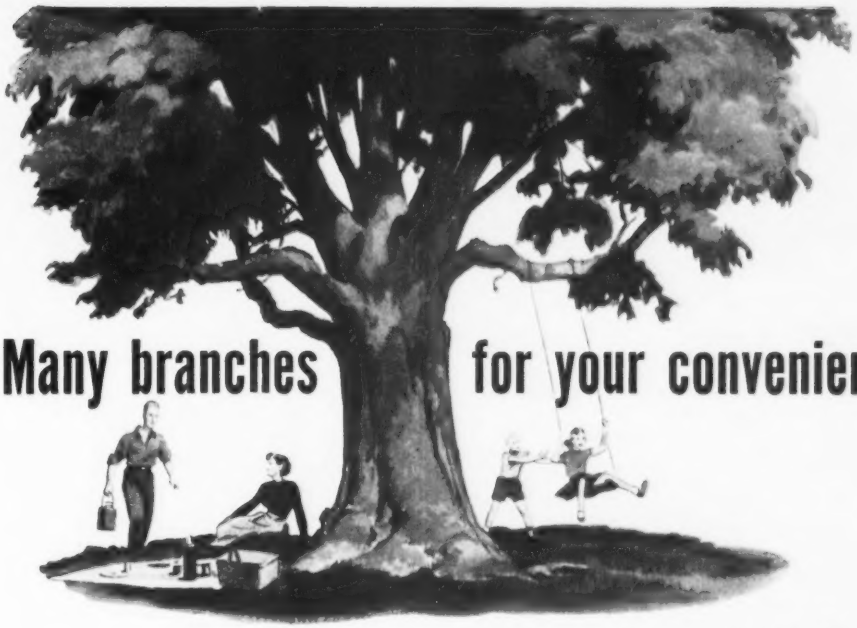
## Hosiery Length

(*Continued from page 111*)

The 15-den. pirns do not need to be mounted at an angle on the new Kalio machine. The reason for not having the pirns at an angle, as on the Reading machine, is that the gallows on this machine is much higher and the yarn has a different tension between the pirn and the carrier.

To eliminate excessive tension, especially on fine-denier yarns, it is advisable on Reading machines to take off all yarn-guide rods (rods that are directly under the drip pans). These rods create a certain amount of drag or excessive tension on the yarn when they become coated with sizing. The porcelains in the drip pans provide all the guide the yarn needs between them and the yarn carriers.

**SELVAGE.** One problem that high-speed machines and lighter-denier yarns for reinforcements or splicings have caused is the difficulty of get-



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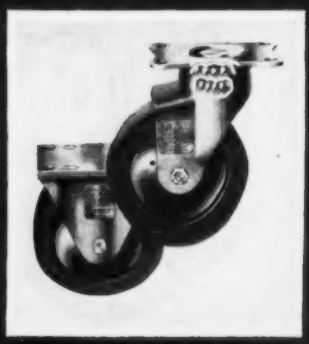

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ting a clean inside selvage in the splicing during the narrowing or widening out for the heel portion. When the machine narrows, the inside splicing carrier that is idle has a tendency to throw an extra loop. The cause of this fault can be traced to several things. While the narrowing operation is being performed, the snappers are supposed to hold the yarn tight. Due to finer yarns, speed in the narrowing, and motion of the snappers, excess yarn is drawn and consequently a bad selvage or loop is made. More tension on the splicing yarn will somewhat reduce this problem.

The best method for controlling length during knitting is still a much-argued subject. Many mills still favor the old method of marking the needles with soap crayon and running the fabric out the number of courses intended to be run per inch in the gray goods. If 15-den. yarn is being knitted and the stocking is coursed 49 courses per inch, run the machine (after the needles have been marked as mentioned) 49 courses. Then check with a 6-in. rule to see if the 49 courses correspond with 1 in. on the rule.

This marking should be done only by a competent fixer because certain heads that need minor adjustment should never be adjusted unless the fixer first checks to see that the yarn is properly wound, that tension on the yarn is the same as on other heads on the machine, and that there is proper play between sinker and verge plate. The fixer must be sure not to overstep the limit of tolerance on the various parts that could deal directly with the adjustments of any head. The correct sinker tolerance is the most important single factor in relation to tension.

This method of controlling length is satisfactory and is probably the best now in use, provided it is done regularly and efficiently.

## Pepperell Open House

(Continued from page 119)

good deal of anxious thought. What would happen if hundreds of persons flocked in at one time? How could the traffic be regulated so that small groups could be taken through the buildings rather than a long parade of individuals who might miss many of the chief points of interest?

This problem was met in two ways. All visitors were received in the Pepperell social auditorium in which there was a bazaar-like exhibit of Pepperell products. This display exerted a leveling influence on flow of people through the mill. If the crowd was small, visitors were taken through the mill immediately and viewed the ex-

A portion of the Soda Ash storage facilities at the Columbia plant, Barberton, Ohio.

*Here's why it pays you to use Columbia Soda Ash — Light or Dense*

**Made for Your Requirements**—Columbia's original product; manufactured, since 1899, with intimate knowledge of the specific needs of all types of industrial applications.

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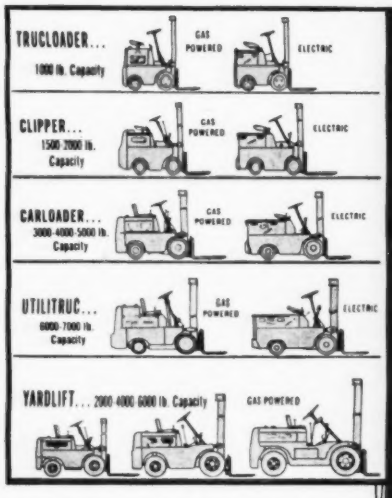
MATERIAL HANDLING News




GAS and ELECTRIC fork trucks

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with maximum interchangeability of parts

a complete line ... capacities 1000 to 7000 lbs.

distinguished for LOW COSTS of operation and maintenance

More than 30 years ago, when Clark undertook to build Materials Handling equipment, it was with a conviction that it could evolve more economical handling methods, and build better machines to implement them. That those high objectives were quickly attained and have been continuously maintained is demonstrated by Clark's leadership in its field. Furthermore, users of Clark machines endorse them enthusiastically for those qualities of fine engineering and workmanship, and rugged dependability which Industry confidently expects from Clark.

*Clark builds both* gas-powered and electric battery-powered fork-lift trucks, with maximum interchangeability of parts between machines of equal size—a potent factor in production economies which liberally reward Clark users in the form of moderate initial cost, negligible maintenance costs and lower operating cost.

Above all, Clark's unique experience with both power-types permits unbiased analysis of your materials handling needs; and *makes it easy to determine from the facts* which type of machine will serve you most efficiently and economically.

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Write for the current issue of "Material Handling News."

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INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 27, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

hibits on the way out; if the crowd was large visitors could view exhibits while groups were dispatched through the plant at regular intervals.

The receiving auditorium was roped off into two long aisles with display space on both sides of each aisle. Pepperell makes over 100 different items, some of them previously little known to Biddeford employees and citizens, since the local plant concentrates on sheets, blankets, and blended fabrics. All of these products were attractively exhibited, with display cards telling briefly the nature of each.

Chief attraction among the displays was an ensemble of ten different bedrooms showing Pepperell sheets, blankets, and other products in use. Beds, chairs, lamps, and other necessary furniture and furnishings were obtained through the courtesy of local merchants, all of whom were given due credit by means of display cards.

From the social hall, visitors went to a waiting room where guides were ready to make up touring parties.

Visitors were routed through the plant in groups of 10 to 20 persons at 10-min. intervals. The guides were chiefly mill foremen, men who knew the operations of the plant thoroughly and were capable of answering any questions asked. Members of the plant's personnel department also assisted in this work when necessary. The personnel department's entire force, in fact, was present at every session of the open house.

All routes from building to building were plainly marked with white arrows so that visitors who strayed away from their group could quickly find their way around. The visitors saw more than 100 different mill operations in a logical sequence, starting with the opening of cotton bales and continuing through to finished fabrics. Each operation viewed was explained briefly by the guide; and in addition a large placard, prominently placed, told the story quickly in print.

Touring time averaged about 75 min. At the place of exit, the visitors had an opportunity to see an ancient hand loom in operation in contrast with a modern power loom. To each departing guest, a packet of booklets illustrating Pepperell history, products, and operations was given as a souvenir.

**WAS WORTH WHILE.** Pepperell's Biddeford officials are frank to state that putting on an open house is a lot of work. But they also feel that the open house was successful and worth while.

"We have reason to feel that our open house was highly successful," say officials who planned and directed the affair with the encouragement and support of top management. Pepperell's advertising department at Bos-

'ROUND THE WORLD WITH ARIDYE PIGMENT COLORS

# HOW THIS PATTERN WAS PRINTED IN *India*

Indian Art Textile Mill, a well-known textile printer in Bombay, India, utilizes Aridye® Pigment Colors for printing a variety of cotton fabrics. The pattern illustrated is typical of those employed for cotton saris.

The formulas used by Indian Art for this particular color combination were as follows: Blue—Aridye Blue FC2G cut 1:15 with Aridye Clear 6214: Green—5 parts Aridye Green FJB and 1 part Aridye Yellow FY2G cut 1:15 with Aridye Clear 6214. The fabric was roller printed in the usual manner, dried and heat treated to provide maximum fastness to washing. No aging, soaping, washing or other aftertreatment was necessary.

Because of their ease of application and numerous other advantages, Aridye Pigment Colors are being used increasingly by progressive textile printers 'round the world. An Interchemical technical representative will be glad to discuss the many ways in which they will be of benefit to *you*. For full details, write to Interchemical Corporation, Textile Colors Division—Pioneers in Pigment Colors for Textiles—Box 357, Fair Lawn, N. J.

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Sharpness of Mark • Exceptional Fastness to Sunlight
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Economy • Ease of Application • No Impairment of Hand

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*Pigment Colors*

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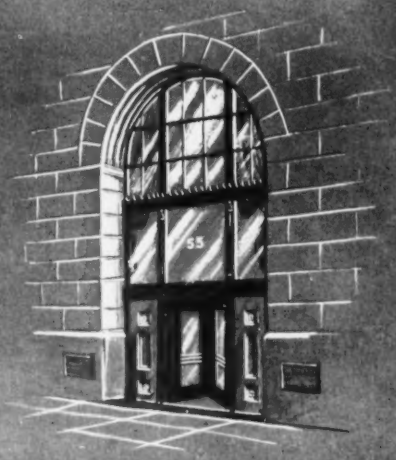
*Sales Representative for India: Modern Products, Ltd., Churchgate House, Churchgate Street, Bombay*




# TEXTILE BANKING COMPANY

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Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

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ton also took an active part in working out the open house program.

"The attendance was fully up to our expectations; the kind of people came whom we wanted to come," company officials said, "and in the four days we did not have a really serious hitch or emergency situation."

"The abundance of favorable comment which followed our open house at Biddeford makes us feel that it was worth the effort as a means of improving understanding of our business, both by employees and by the people of our community," Lyman Smith, general manager, stated.

Pepperell left out some of the frills. No refreshments were served, for example, although consideration was given to this point.

In summary, Pepperell's open house experience at Biddeford demonstrates that the pattern for success must include at least the following things: timing, planning, training and rehearsing, publicity, showmanship in product display, and care and alertness while the tours are in progress. While the tours went on, the watchful eyes of plant officials saw to it that every part of the performance went according to plan.

Above all, well organized, detailed planning, leaving nothing to chance, seems to be the essence of what it takes to run an open house successfully.

## Uptwisters

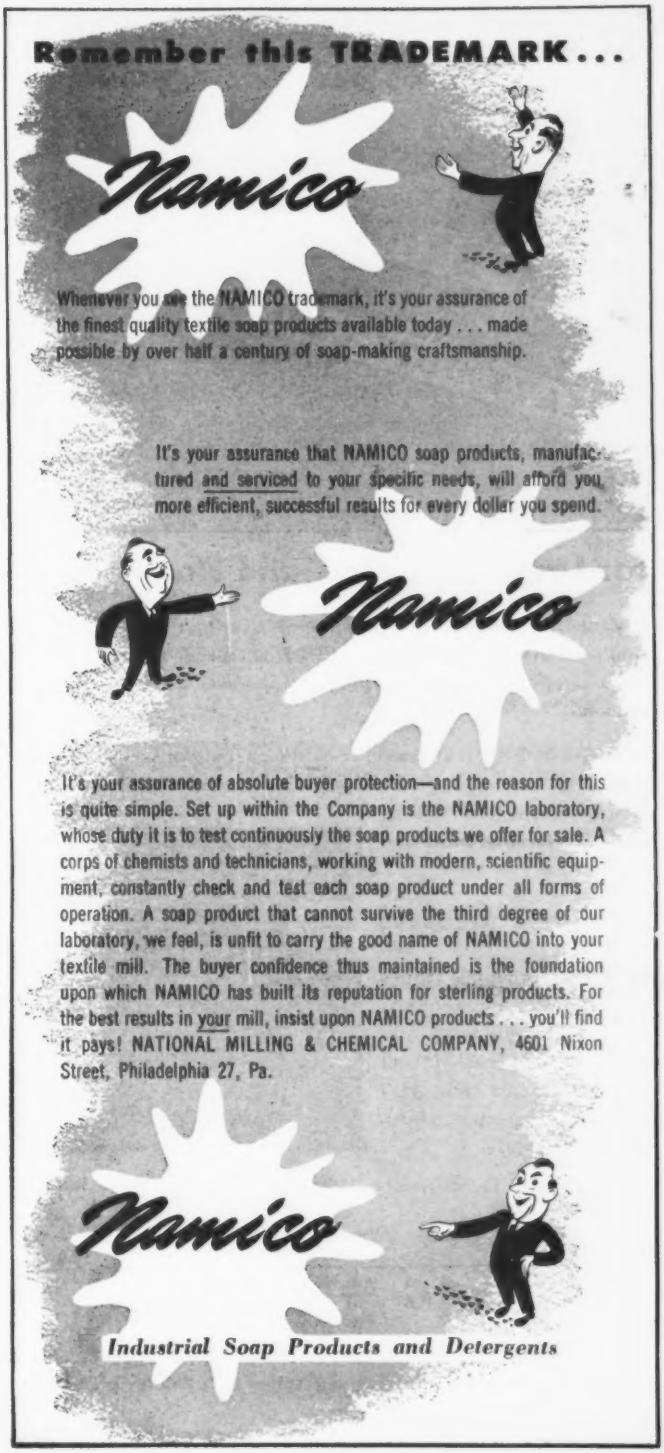
(*Continued from page 139*)

junction with stainless-steel ferrules in the winding-spinning bobbins is to be preferred.

When wired correctly, the drop-arm of the flyer will just clear the head of the bobbin. The wire size and the frequency of rewiring will depend largely on the yarn, spindle speed, and atmospheric conditions.

Accompanying is a table listing flyer wires that have been found suitable for a variety of viscose yarns and turns at 10,500 rpm. spindle speed. When throwing no-twist cuprammonium yarn into crepe, a spindle speed of 9,500 may result in fewer ends down. Some throwsters prefer a "figure 8" flyer to prevent ballooning which would tend to open up the filaments.

The foregoing applies to the twisting of single-end yarns, not combinations, on up-twisters. A great deal of voile yarn, and some crepe, is thrown on ring twisters. Such twisters are generally old machines converted from cotton twisting or spinning. In general, however, up-twisters are to be preferred because of their greater cleanliness and higher production. Also,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## for Large Packages and Heavy Yarns

**Designed for the large packages used in weaving rugs, blankets, and similar heavy fabrics, these McBRIDE all metal, all welded creels often completely replace warping as yarn goes directly from creel to loom.**

**Exclusive McBRIDE stiffening truss design (shown below) provides light weight, strength, permitting full air circulation and ample light between creels, thus assisting creeler in locating tubes that are about to run out.**

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**CREELS *for every purpose,* WARP BEAMS • FLANGES • ROLLS**

up-twisters use less floor space and normally can be run with a lower labor cost.

The lower cost of operating up-twisters is due to (1) less walk time compared to work time, (2) less inspection needed for ends down, and (3) their ability to be run package to package. The last element is of especial importance, as it reduces knots (always objectionable and costly) and permits the operator to doff and creel a position at the same time. It should also be borne in mind that up-twisters need not be stopped for doffing. Waste is usually lower on up-twisters if winding is good and operators are well trained. A number of two-for-one twisters are being developed as possible successors to up-twisters. The theory of these machines is many years old, but both here and abroad no machine has been produced in quantity to compete with modern half-pound-package up-twisters.

The most significant new development in up-twisting is probably the introduction of transfer tails on twister bobbins. Bobbins have been developed for such tails, which are being used successfully in low-twist and voile yarns. For crepe yarns, there are still problems to be overcome in utilizing the tails. There is no problem in producing tails in bobbins of crepe yarn.

## Spinning Tapes

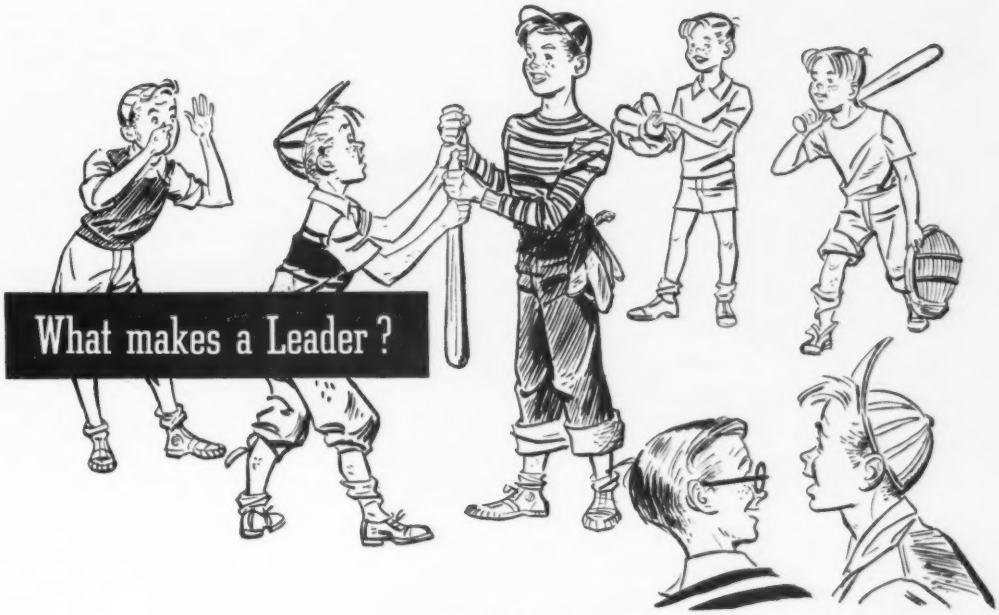
(*Continued from page 127*)

**TAPE AND POWER.** The tests referred to, together with a series of tests conducted independently, proved that there existed a definite relationship between the type of spinning tape used and the power consumption of the frame, and that this relationship was dependent upon the weight and the pliability of the tape.

It must be remembered that in a 50,000-spindle mill there are approximately 125,000 ft. of spinning tape weighing approximately 870 lb., which, in driving spindles at 9,000 rpm. (an equivalent to traveling 25 mph.) consume a great deal of power.

To this power requirement must be added the additional force exerted to overcome all the short and sudden flexings of every fiber of the tape around the whorl of the spindle, the tape-tension pulley, and the cylinder. In addition, power is consumed by the wind resistance of the tape, the tension pulley, and the vibration of the tape as it travels around.

The tape joint is another source of power consumption, as the bulk of the joint creates greater wind resistance, causes more tape vibration, and lowers the efficiency of the drive through greater slippage. It should therefore

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**The unsurpassed quality and uniformity of Solvay products are backed by:**

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- **the long experience and production skill of the men who run these plants**
- **a progressive research organization working with the finest in laboratory equipment**
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**TOLEDO**

**HEADQUARTERS FOR SCALES**


be realized that the type of tape and the condition of the tape are major factors in determining the power consumption of the frame.

The 50,000-spindle mill operating on medium counts, which has been taken as an example, will find that 1 hp. will drive approximately 30 spindles. The total power requirements of the spinning frames of this mill will be 1,666 hp. per hr., or 1,242 kw. per hr. In view of these figures, it is apparent that any reduction in power caused by the proper selection and application of tape would result in substantial operational savings.

It has been proved that a series of careful tests carried out by the technical laboratory of a mill can achieve the means of selecting a tape that will save from 7% to 12% of the total yearly cost of the power bill for the spinning room.

**SLOWER CYLINDER.** The importance of an increased spindle speed from proper selection of tape is not in achieving a higher speed of the spindle with the cylinder turning at its normal speed, but in being able to decrease the speed of the cylinder and still keep the required spindle speed.

In changing to the tape which will maintain the proper spindle speed, the twist gear can be changed to keep up, or improve, the previous production. The slowing down of the cylinder is accomplished by using a larger driving pulley, so that the power consumption of the frame is reduced.

Again referring to power tests, and means of reducing amount and cost of the power required to run the spinning frame, a low cylinder speed is very desirable. Tests demonstrated that at 1,000 rpm. the power required to drive a cylinder alone was only 0.46 hp. This power increased to 0.63 hp. at 1,200 rpm. and to 0.76 hp. at 1,350 rpm.

The sharp increase in the force necessary to turn the cylinder is because the rotating cylinder moves a tremendous amount of air, and the power necessary to move this air varies approximately with the cube of the speed.

It is clear that the cylinder which is most economical is the one which develops the given spindle speed at the lowest speed of the cylinder itself. Low cylinder speeds also mean that there is less tooth speed at the gears in the head end, resulting in less gear wear and less noise.

There have been many attempts in the past few years to improve durability and driving qualities of tape, both by employing some type of im-

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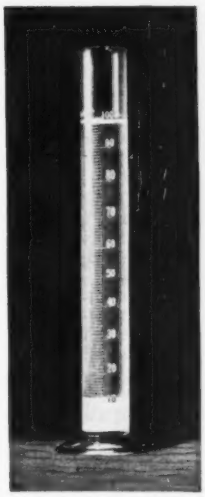
## A New Product for DYERS and PRINTERS

**LOMAR PW** the new dispersing agent developed by Jacques Wolf & Co., assures more efficient and economical processing.

### TYPICAL OF THE DISPERSING ACTION OF LOMAR PW

The contents of these two graduates are identical, except for a small percentage of LOMAR PW. Note the continued even suspension and dispersion in the right hand graduate after standing ten times as long as the one at the left.



*Blanc Fixe after 30 minutes — no dispersing agent*

*Blanc Fixe after 5 hours — plus LOMAR PW*

### • *In Dyeing*

Level shades and uniform absorption of dyestuffs by the fibres, depend largely upon an even dispersion of colors in the dyebath. The addition of a small amount of LOMAR PW in pasting up indanthrenes or acetates solves this problem.

### • *In Printing*

When added to the printing paste, LOMAR gives finer particle suspension, improved flow and smoother consistency. By keeping the colors in suspension, LOMAR PW assures efficient, economical results.

### • *In Backfilling*

In backfilling, LOMAR PW is added to the heavy backfill mixture of clay and starches to give uniform suspension of the clay, good flowing properties and more uniform results on the fabric.

*For complete information on LOMAR PW, send today for your copy of Bulletin No. 21.*

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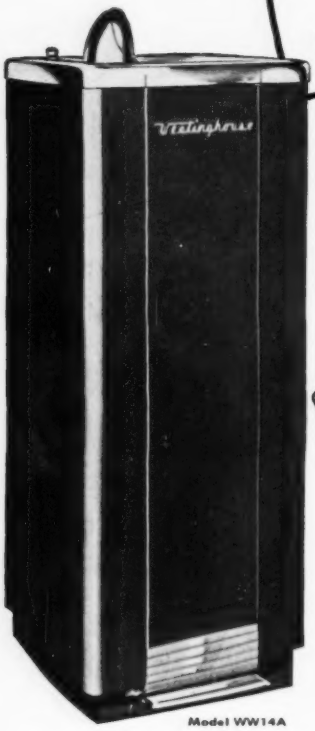
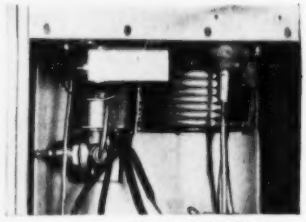



Model WW14A



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For cooler installations where air-cooled condensers are satisfactory, Westinghouse provides four other models. Everything from a Bottle Cooler to six Pressure Coolers . . . a capacity and type for every need.

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pregnation and by resorting to a different fiber from cotton. Various kinds of plastic and synthetic rubber coatings have been applied; and these have resulted in attaining a tremendous grip on the cylinder surface and the spindle whorl, so that tape slippage is reduced to an absolute minimum.

The great advantages of an efficient drive are completely offset by the difficulty experienced by spinners when piecing up ends. This trouble is due to the inability to remove the bobbin from the spindle blade, as the grip of the coating on the tape makes it practically impossible to stop the spindle. An additional argument against coated tape is that any coating has a tendency to make the tape heavier and to cause an increase in power consumption.

**OTHER FIBERS.** Experiments with tape made from fibers other than cotton have been more gratifying and offer future success. Various types of filament and staple rayon have been tested, together with tapes from glass fiber and nylon.

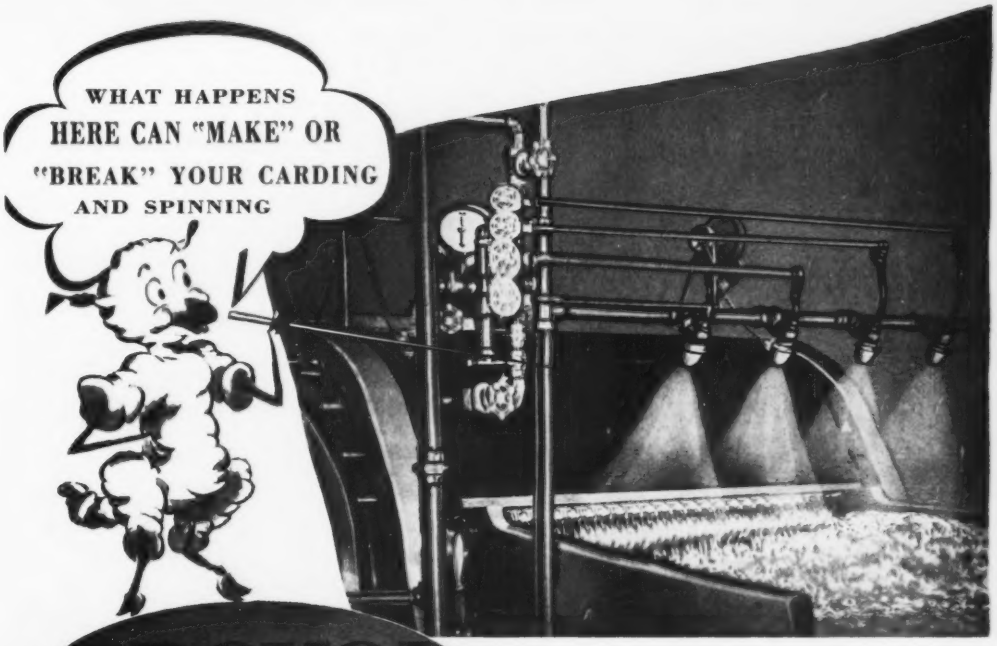
Tape manufactured from glass fiber looked promising, as it could be made very thin—around 0.030 in.; but the advantage of thinness was more than offset by the extremely high density of glass. This density exceeded that of cotton to such an extent that even the thin glass tape weighed a great deal more per unit of length than a comparable cotton tape. The net result was that there was an increase in the power required that was substantial enough to rule out glass completely.

Nylon tapes still seem to offer the most promise of any tape, other than those made of cotton. Nylon produces a tape which is extremely pliable and flexible, gripping the whorl and cylinder more closely and resulting in increased spindle speed.

It is possible to manufacture a spinning tape from nylon and several other synthetic fibers which will be very thin, pliable, strong, and satisfactory in that they will show a considerable increase in spindle speed as well as a sufficient saving in power per spindle.

Up to the present time, there have been two main obstacles preventing adoption of synthetic-fiber tapes. The first drawback has been in the high cost of the synthetics; this is particularly true in the case of nylon. The other trouble has been the difficulty in firmly joining the ends of the tape.

Many methods have been developed in an attempt to improve on the sewed tape joint, and some progress has been reported. The main alternative to sewing has been the use of

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*the Multi-Quality* WOOL OIL

## *the right answer*

FOR YOUR WOOL CARDING

AND SPINNING PROBLEMS

It's no trick to apply wool oil. And most good wool oils will give reasonably satisfactory results in carding and spinning—from a lubrication standpoint. But that's only part of the story! When the lubricating job is done, *will the oil scour out easily?*

If it falls down here, you know what can happen. Some oils are difficult to scour out. Others oxidize on the fibers, yarns and fabrics during storage, causing fabric discoloration, poor scouring, uneven dyeing and objectionable odors.

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Wool oiled with Proxol is properly oiled for smooth efficient carding and spinning. Fiber breakage is minimized. Furthermore, Proxol scours out easily and thoroughly after its lubricating job is done, with 40% to 75% savings in the soap normally used.

Your worries about discoloration and undesirable odors in stored fibers or fabrics are over when you use Proxol. Try Proxol. You'll find it a paying investment in terms of trouble-free carding, spinning and scouring.

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## *what is Proxol?*

*Proxol is a clear wool oil of exceptionally uniform quality. Highly resistant to oxidation. Pour point less than 20° F. Self-emulsifiable in soft or hard water at all temperatures. Emulsions are extremely stable — stay the same after standing as when freshly prepared. Small emulsion particle size assures fast, even penetration. Antistatic—consistently produces less waste than is normally expected. Proxol's efficient lubrication and proper drag produce stronger, more uniform yarns, better fabrics . . . reduce stripping. Noncorrosive . . . assures longer life for card clothing. Proxol means fewer ends down...more yarn per spinning operator hour.*

# PROXOL

*is made by the makers of Olate, the universal low-titre textile soap*

Speed Giants for Large Loads

**TOLHURST**

**96" CENTER-SLUNG* EXTRACTOR**

The enormous size of Tolhurst 96" Center-Slung Extractors simplifies and speeds up extraction of rugs, blankets, felt goods and other materials. These large-capacity extractors are capable of handling maximum unbalanced loads safely due to their patented "Center-Slung" construction.

Safety covers are standard equipment. Automatic timer available at slight additional cost.

WRITE FOR 20-page illustrated catalog and prices on Tolhurst "Center-Slung" models and other Tolhurst extractors designed expressly for the textile industry.

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various clips and wire hooks and, in some cases, vulcanizing. Sewing is still the most satisfactory way to join the ends of the tape, as the sewed overlap joint is strong and gives the tape a maximum life with a minimum amount of vibration.

**USE STROBOSCOPE.** A well-managed mill should own a stroboscope and should occasionally check spindle speeds, not only from frame to frame but from spindle to spindle, with spot checks in order to keep the spindles at their maximum efficiency.

It is further recommended that any mill which is not sure it is obtaining this maximum efficiency from spinning tape should order small amounts of sample tapes from several tape manufacturers, getting enough sample tapes of different specifications to equip one test frame. The frame chosen should be one that is typical of the frames used for the principal yarn being produced, so that the counts of yarn being spun will not vary.

To make the tests completely conclusive, a power-recording meter should be attached, and power tests run on each different tape. In addition, spindle speeds should be determined on identical spindles, together with cylinder speed and motor recordings.

While these tests are being conducted, all conditions must remain constant; the same frame must be used, spinning the same counts of yarn. The test readings of the spindles and tapes, and the cylinder and motor, should be taken at the same intervals during the doff.

A superior means of making such tests is use of an automatic recording chart whereby the power may be recorded on a graph from beginning to end of a doff. A series of tests, even if not carried out to the precision required by a testing laboratory, will make clear to the technical staff and to the management that there are definite and promising possibilities for improvement in the efficiency of the spindle-driving units.

## Vat Dyeing of Wool

(*Continued from* page 137)

this bath, comprising nine-tenths of the total dyeing volume, 0.25 to 0.5 oz./gal. of caustic soda and 0.7 to 1.0 oz./gal. of sodium hydrosulphite are added. After the bath is run for 5 to 10 min., the reduced color is added slowly. The caustic soda concentration is now between 0.525 and 0.75 oz./gal. while that of the hydrosulphite is between 0.93 and 1.3 oz./gal., the large amounts being used for

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Hooker Products List, Bulletin 100, contains chemical and physical characteristics, uses and shipping information on nearly 100 Hooker Chemicals, many of them for the textile and dye industries. Send for a copy.

| PRODUCT<br>*Chemical Formula; Molecular Weight* | HOOKER SPECIFICATIONS | SUGGESTED USES |
|---|---|---|
| **Antimony Trichloride Anhydrous**<br>$SbCl_3$; 288.1 | Antimony Trichloride..... 99% Min.<br>Iron and Arsenic..... 1% Max.<br>Lead..... 0% | Catalyst in organic synthesis; mordant in textile printing. Moisture and fireproofing textiles. |
| **Benzal Chloride**<br>$C_6H_5CHCl_2$; 161.0 | Clear, yellow liquid.<br>Boiling Range..... 200 to 235°C<br>Specific Gravity 15.5°/15.5°C..... 1.279 ± .005 | Dyestuff intermediate. |
| **Chloranisidine**<br>$NH_2C_6H_3ClOCH_3$; 157.5 | Gray crystalline solid.<br>Melting Point..... 79°C Min.<br>Diazo Test..... Relatively clear. | Dyestuff intermediate. |
| **Lauryl Pyridinium Chloride**<br>$C_5H_5N\ (C_{12-6}H_{20-2})Cl$; 292.0 | Mottled tan, semi-solid.<br>Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as $C_{12}$)..... 85.0% Min. | Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing. |
| **Monochlorbenzene**<br>$C_6H_5Cl$; 112.5 | Clear, colorless liquid.<br>Distillation Range..... 131.3 to 132.3°C | Dyestuff intermediate, preparation of sulfur black, brown dyes. Solvent. |
| **Orthodichlorbenzene, Tech.**<br>$C_6H_4Cl_2$; 147 | Clear, colorless liquid.<br>Freezing Point..... −10° to −22°C<br>Boiling Range..... 6° including 179°C | Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool. |
| **Phosgene (Carbonyl Chloride)**<br>$COCl_2$; 98.9 | Colorless gas at ordinary temperatures. Does not discolor a 0.2% solution of KI when vigorously bubbled through it for one half hour. (Test for free chlorine) | Dye intermediate; chlorinating agent. |
| **Sodium Sulfhydrate**<br>NaSH; 56.1 | **NaSH.....70 to 72%  $Na_2S$..... 25 to 2.5%**<br>Fe.....5 ppm Max.  NaCl..... .4 to .8%<br>$Na_2So_3$ and $NaHCO_3$..... .04 to .4%<br>Cu, Ni, Cr, Mn, Pb..... 1 ppm Max.<br>Water of crystallization..... 28 to 26% | Desulfurizing rayon; calico printing; in sulfur dye baths. |
| **Sodium Sulfide**<br>$Na_2S$; 78.1 | $Na_2S$..... 60 to 62%  Fe..... 8 ppm Max.<br>NaCl..... 1.5% Max.<br>Other Na Salts..... 2.0% Max.<br>Cu, Ni, Cr, Mn, Pb..... 1 ppm Max.<br>Water of crystallization..... 36.5 to 34.5% | Desulfurizing rayon; calico printing; in sulfur dye baths. |

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CHEMICALS FOR WOOL PROCESSING

darker shades. The pH of this bath is somewhat above 11.

Dyeing is now carried out as follows:

Run 30 to 60 min. at 90° F.

Raise temperature to 100° F., run 10 min.

Raise temperature to 110° F., run 10 min.

Add 2 to 6 oz./gal. common salt, run 10 to 20 min.

The longer dyeing period at 90° F. is used for heavier or more tightly woven fabrics to insure adequate penetration, and the quantities of common salt used are dependent upon the depth of shade being dyed.

When the temperature of 110° F. has been reached, it is essential to check both the caustic soda and hydrosulphite concentrations. For this purpose Clayton Yellow paper, which should show a faint red under proper conditions of alkalinity and Ponsol Yellow G paper, which must turn green instantly if sufficient hydrosulphite is present, are satisfactory. Where a deficiency of either caustic or hydro is noted, appropriate additions should be made immediately to prevent the vat from falling out of solution with resultant pigmentation and formation of streaks on the goods. There is practically no oxidation of the vat dye on the wool as it passes over the reel, even in open kettles.

After the dyeing cycle is completed, caustic soda remaining in the bath is immediately neutralized to soda ash by the addition of sodium bicarbonate. The bath is dropped; the material rinsed, oxidized with sodium perborate, and soaped. The addition of bicarbonate to the dyebath is an important step in producing bright shades of good tinctorial value.

**PIGMENT METHOD.** The pigment method eliminates the need for reducing the vat color prior to dyeing. The pigment color is added to the dye kettle and the goods run for about ½ hr. at 90° F. Caustic soda and hydrosulphite, 0.6 to 0.75 and 0.9 to 1.3 oz. gal., respectively, are added and the same dyeing cycle followed as has been described for the reduced method.

Manipulation is somewhat simplified in this instance because reducing the color in a separate container can be eliminated. It is limited, however, to the use of colors which can be reduced at temperatures of 90° to 100° F. For example, such colors as Ponsol Red G2B Double Paste and Sulphanthrene Pink FF Paste, a thioindigoid type, are not suitable for application by the pigment method. On the other hand, the pigment method lends itself better to the dyeing of wool-viscose mixtures than the reduced method, since improved penetration

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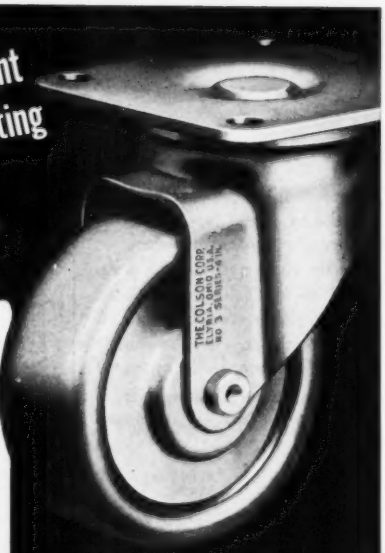


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of the viscose component is obtained.

Large quantities of worsted tops and smaller amounts of raw stock have been dyed with vat colors, preferably using conventional circulating machines of either the closed or open type. The procedure followed is almost the same as that described for piece goods. The spring bath is first circulated through the wool at 90° F. followed by the addition of reduced color.

Total concentrations of caustic soda and sodium hydrosulphite range from 0.5 oz./gal. each for light shades to 0.65 and 0.75 oz./gal. for darker shades. The vat dye is again reduced in one-tenth of the total dyeing volume, and 0.125 to 0.25 oz./gal. of Alkanol WXN is sufficient for wetting out the wool.

The dyeing cycle is as follows:

Circulate spring bath 5 to 10 min. at 90° F.

Add reduced color, circulate 10 to 15 min.

Raise temperature to 110° F. circulate 15 min.

Add 2 to 6 oz./gal. common salt, circulate 20 to 30 min.

Drop bath.

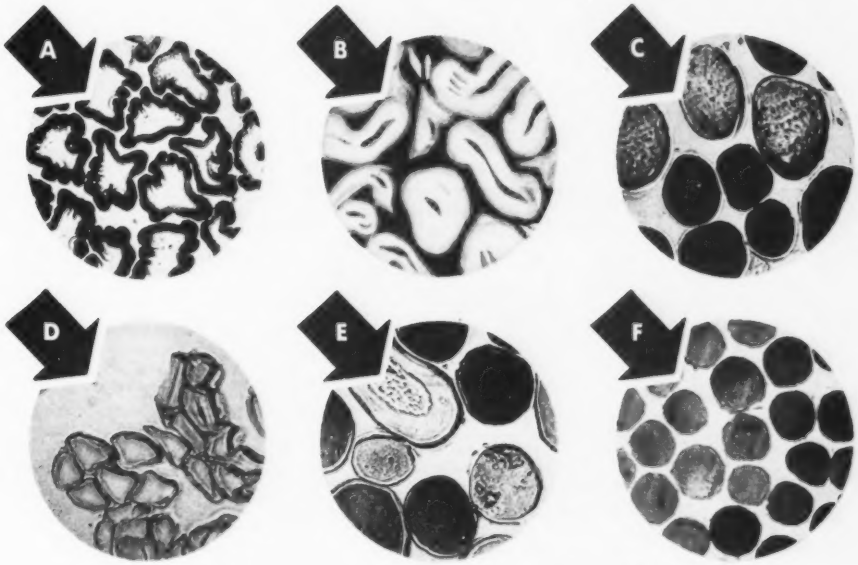
Contrary to the procedure for piece-goods dyeing, sodium bicarbonate is not added directly to the dyebath. The machine is first drained and filled up again through the expansion tank with water containing the necessary amount of sodium bicarbonate. After circulating for 5 to 10 min. the material is rinsed, oxidized, and acidified. For dark shades, however, it is better to rinse immediately after dyeing, then neutralize with sodium bicarbonate. The resultant decrease in color value is more than offset by improved crocking fastness.

**FOR RAW STOCK AND TOPS.** On raw stock and tops, the pigment method has given satisfactory results in only a few instances, mainly pale shades, and is not generally recommended.

In dyeing worsted tops, use of cotton covers or jackets should be avoided, particularly for pale shades. For some types of machines, these are not necessary because of the low temperature employed. Where such covers are needed, it is recommended that they be made of wool, nylon, or viscose. At the low dyeing temperatures used, vat colors generally have a much greater affinity for cotton than for wool, and much of the available color would be absorbed by the cotton jackets.

The finishing treatment after dyeing is almost as important as the dyeing itself in preventing wool damage. Previous recommendations call for oxidation of vat-dyed wool with acetic acid and peroxide. However, this proc-

# How many of these Fibers can you Identify?




Photomicrograph Courtesy Textile Fiber Atlas

You're an expert if you guessed all six. No matter how many of these fibers you named correctly, they're all vital to Stein Hall. Each of these fibers and many more are continually under the scrutiny of our laboratory technicians.

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Comparison of Oxidation Methods

| | Relative Strength |
|---|---|
| Control | 100.0% |
| Bicarbonate-perborate | 98.6% |
| Acetic acid-peroxide | 76.5% |

ess may increase the harshness of the wool to a much greater extent than the caustic soda used in the dyeing cycle.

When acid oxidation or neutralization is employed and caustic alkali is still present in the wool, heat of reaction developed within the fiber is sufficiently severe to cause wool damage. A decrease in tensile strength of 25% or more as well as a feel of harshness result. If caustic soda is neutralized with acetic acid at room temperature, approximately 13,800 gram calories per gram mole are generated. When sodium bicarbonate is used, only about 9,100 gram calories are generated, with the added advantage that soda ash is formed. It, in turn, is more readily washed out of wool than is the stronger base. Caustic soda is difficult to remove even from one's fingers with water alone, and it is equally as hard to wash out of a tightly packed mass of wool. Even after prolonged rinsing, a considerable amount of caustic remains in the animal fiber. This heat of reaction is confined within the fiber, is of short duration, and is soon dissipated by the cold acidifying bath; but its action is sufficient to cause wool damage.

The tinctorial value of the dyeing is also influenced by use of bicarbonate (to reduce caustic alkalinity), particularly in the case of piece goods where washing is much more efficient than in raw stock or top-dyeing machines. As long as caustic soda and hydrosulphite are present in the wool, the vat dye is, of course, still in its soluble leuco form. Unlike the dyeing on cotton, it does not seem to have sufficient affinity to resist washing. The loss in tinctorial strength due to washing may amount to as much as 50%. By adding bicarbonate to the bath, however, and forming soda ash within the fiber, the pH is reduced with a resulting reduction in solubility of the leuco compound. Then the wool can be washed without danger of removing a considerable portion of color.

This step is followed by normal oxidation with sodium perborate, as previously described. After oxidation, it

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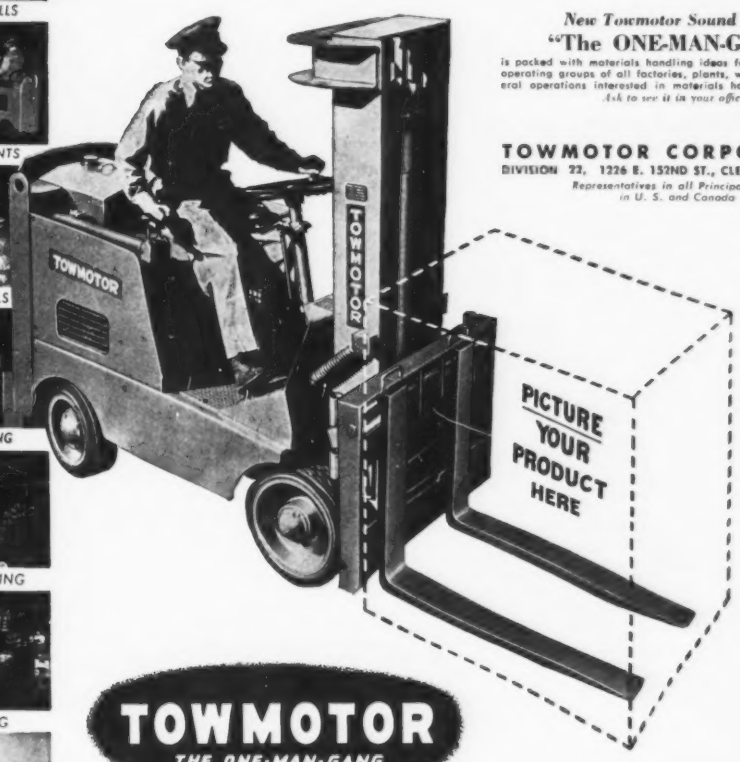


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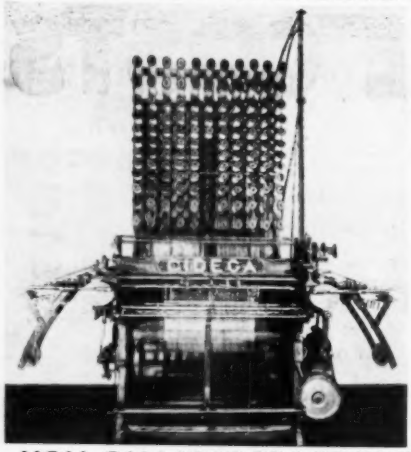


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is essential that the material be well washed again. Piece goods should be soaped to remove any surface pigment, although this may not be necessary in the case of worsted tops and raw stock where the usual wet finishing of the final fabrics will accomplish the same result.

Acidification as a final step is also important, since worsted tops are somewhat loftier after an acid treatment; and vat-color-dyed wool, particularly in paler shades, shows improved fastness to light if the material is neutral or even slightly on the acid side.

Perhaps the most important factor in promoting the general acceptance of vat colors for wool dyeing is the selection of the dyestuffs. All vat colors can be applied to wool by the methods described, but all of them are by no means suitable for every purpose.

### Tricot Finishing

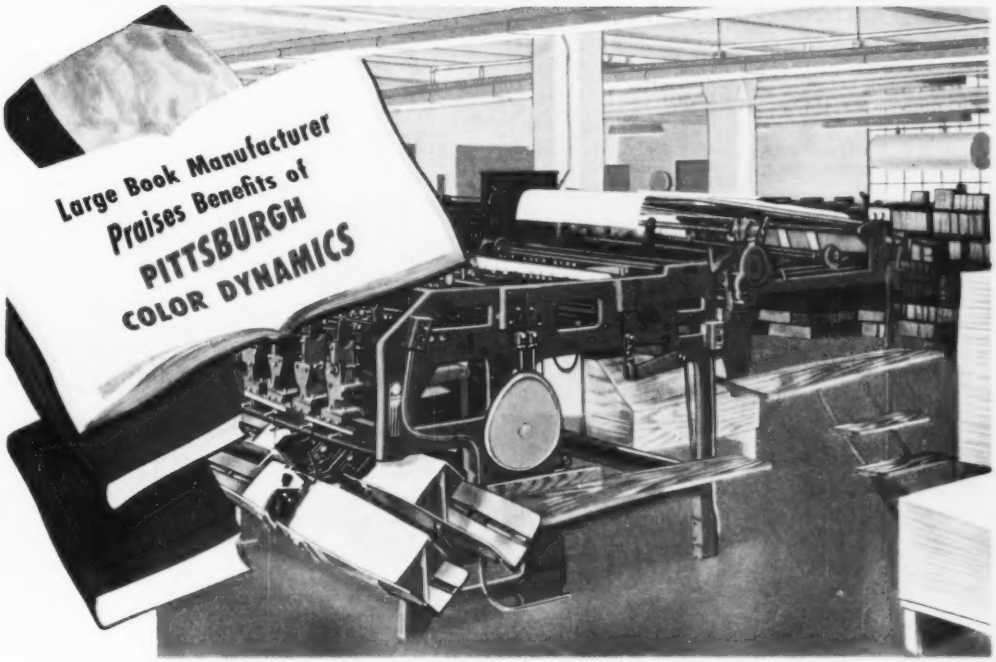
(*Continued from page 129*)

or more tacking and detacking operations: (1) by pressure steam in autoclave; (2) by immersion of cloth in boiling water; (3) by running cloth between heated rollers.

Drying of tricot fabrics has been improved recently by an over-feed device on the pin frame which prevents drying of the fabric in taut condition and gives opportunity for controlled shrinkage while drying. The loop-dryer method allows the fabric to dry without controlled shrinkage; this method gives the fabric a full hand. The loop-dryer method may give less yardage in cloth than the pin-frame method, a factor in cost determination.

A suction-type dryer has some utility at this stage in tricot finishing. In this machine, the cloth is held on a perforated cylinder by a revolving belt and is dried by heat and suction. The use of this type dryer by itself for tricot cloths has been questioned, but it is used by some finishers in conjunction with the pin frame.

On a pin frame, it is desirable that there be automatic opening, feeding, and over-feeding devices; anti-curling equipment; automatic guiding apparatus; and an electric drive with centralized panel control. The latest tricot pin frames are made to finish up to 150 in. in width. The length of the pin frame depends upon what is needed for drying the fabric, the number of fans, heaters, etc. The latest six-fan model can dry acetate at 50 yd. per min., is 72 ft. long, and is engineered so that each section can have a different degree of heat, which is important if resin finishes are to be

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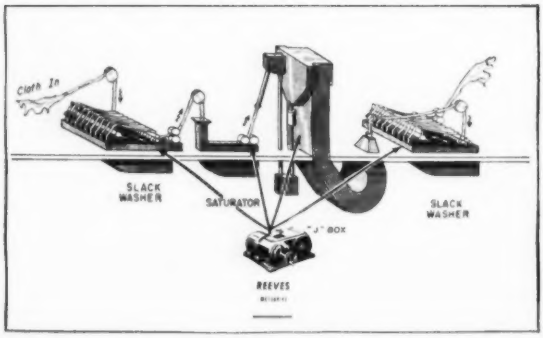
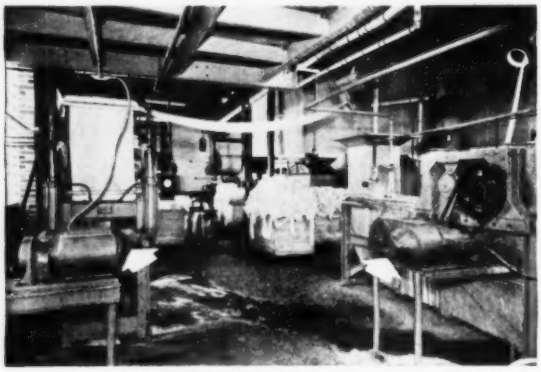
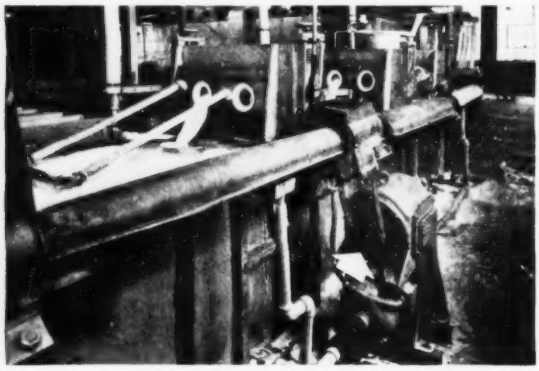



Schematic sketch illustrating the part REEVES Speed Control plays in the continuous bleaching process at the Pottsville Bleaching and Dyeing Company.



Arrows indicate two of the four 7½ hp REEVES Vari-Speed Motodrives used in continuous bleaching process. At left, REEVES No. 5282-F-18 driving the Slack Washer; at right, same model driving the Saturator.



An Inverted No. 500-F-18 REEVES Motodrive, driving the line shaft from which the squeeze rolls between each section of the washer are driven.

ACCURATE • VARIABLE

*Reeves Speed Control*

GIVES THE RIGHT SPEED FOR EVERY JOB!

# Continuous J-Box Bleaching—

# *100% Reeves Controlled*

## Saves Chemicals! Manpower! Money!

A newly developed DuPont process of continuous J-Box peroxide bleaching makes possible bleaching on a larger scale than ever before . . . while saving manpower and chemicals; increasing production; reducing manufacturing cost!

Typical application of the process is the range installed by Pottsville Bleaching and Dyeing Company, Port Carbon, Pa. It is of the one-stage, rope type and incorporates four REEVES Vari-Speed Motodrives to assure accurate, instant speed control for every operation in the entire bleaching process. These REEVES units perform five vital functions: (1) synchronize all machine speeds; (2) adjust overall speed to different grades and types of cloth; (3) provide independent speed control for each machine and permit individual sections to be shut down while others operate; (4) improve quality and uniformity; (5) increase output—a total of 8,000 to 9,000 pounds of cloth every six hours!

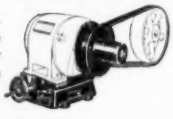
In many ways, in many plants, on many different machines, REEVES Speed Control is proving its value to the Textile Industry. Manufacturing the most *complete line* of variable speed drives available today, REEVES has the *right* unit for every type of application, every speed control requirement. If *you* have a speed control problem, write, stating its nature and machines involved. Ask for free catalog W-4-450A.

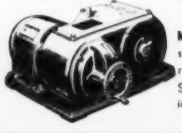
**REEVES PULLEY COMPANY • COLUMBUS, INDIANA**

### THE 3 BASIC REEVES SPEED CONTROL UNITS

**VARIABLE SPEED TRANSMISSION** for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.

**VARI-SPEED MOTOR PULLEY** provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 10 hp.





**MOTODRIVE** combines motor, speed varying mechanism and reduction gears in single unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 20 hp.

cured and temperatures of over 300° F. are needed.

**IMPORTANCE OF PIN-FRAME.** In streamlining production so that it may be as continuous as possible, tricot cloth may be opened and run on a tensionless suction-slot extractor, as previously indicated. Continuous production in itself, however, is not desirable unless it increases production and lowers cost.

The greater the amount of water removed from the cloth before heat is used, the more rapid the production of the pin frame. The pin frame is an expensive machine and paces production throughout the plant. The centrifugal extractor leaves about 35% moisture in the goods. If the suction-slot extractor leaves considerably more moisture in the goods, this means slower production for the pin frame.

A pin frame which does 50 yd. per min. of acetate cloth does about 14 lb. per min., or 840 lb. per hr., hence the machinery setup before the pin frame should produce a little more than that poundage in order to keep the pin frame constantly engaged. A modern pin frame costs in the neighborhood of $30,000 and can be considered as the unit which determines the size of the tricot-dyeing plant. The following machinery is needed to balance the plant: two tacking machines, one presetting machine for acetate, one presetting machine for nylon, eight to ten dyeboxes, one centrifugal extractor, a wide padder for resin finishes, and a detacker, detwister, and cloth opener. Most finishes are put on tricot in the final rinses after dyeing. The cost of a machinery setup, such as just described, without considering real estate and boilers, is in excess of $100,000.

**PLANT FACTORS.** The following problems enter into the construction of the proposed tricot dyehouse:

1. Location.
   - A. Proximity to supply of gray goods.
   - B. Proximity to market.
   - C. Supply and quality of labor.
   - D. Type and cost of fuel.
   - E. Quality and cost of water.
2. Construction of building.
   - A. Desirability of streamlined layout, with goods traveling in a straight line through plant.
   - B. Efficiency of steam production and conservation of steam and heat.
   - C. Ample room so that production is not cramped and and storage of goods is facilitated.

(Continued on page 232)


# Why postpone needed construction?

**FEATURES**

- Rigid-Frame Construction, without space-conserving trusses
- Clear spans of 40 to 100 feet
- Eave heights of 12 to 20 feet
- Lengths as desired in 20-foot increments
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LURIA now offers a *complete line* of permanent, heavy steel-frame structures that cost little or no more than light-weight temporary buildings. What's more, they can easily be adapted to meet your precise requirements, for anything from a warehouse to a complete plant. And they are available now, ready for prompt delivery. Write today for our new 20-page catalog on the complete Luria line.

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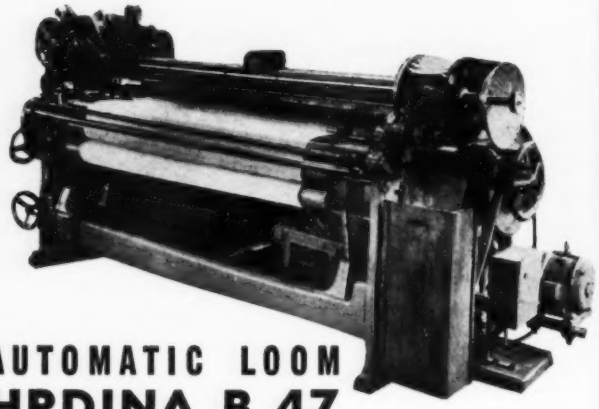

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HRDINA B 47
*reedspace 73", 16 shaft dobby*

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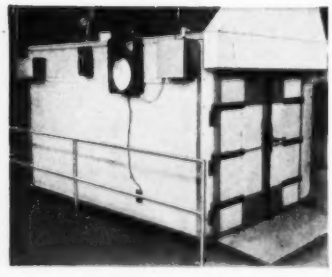
*Series 9 of typical "H-W" CONDITIONER applications*

***"H-W" CONDITIONERS**

**in use by**

**BACHMANN UXBRIDGE WORSTED CORP.**

**in the following mills:**



View of "H-W" CONDITIONER installed in mill at Uxbridge, Mass.

Bachmann Uxbridge Worsted Corp. mill, Uxbridge, Mass.

Putnam Woolen Corp. mill, Putnam, Conn.

Bachmann Uxbridge Worsted Corp. mill, Pascoag, R. I.

Macon Textiles, Inc. mill, Macon, Georgia.

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*Full particulars in Bulletin UC-1, upon request*

**Visit our Booths 73 and 74 at Knitting Arts Exposition, Atlantic City, April 25-29**

**The Industrial Dryer Corporation**
**STAMFORD, CONN.**

(*Continued from page 231*)

3. Machinery.
   A. Necessity for automatic processing so that handling by labor is at minimum; with cloth traveling at the rate of 50 yd. per min. through the plant, the human element is almost eliminated and production quality is dependent upon quality of machinery.
   B. Desirability of top-grade maintenance. The machinery must be mechanically as perfect as possible so that there will be no defects in the cloth due to mechanical deficiencies.
4. Organization and quality of management personnel.

Most tricot cloths are currently of several simple patterns knitted mostly on 28-gage machines. The trade must expect changes in the cloth as to fiber, machine construction, and fabric construction as the possibilities of the fabric are realized. These changes will in turn be reflected in tricot dyeing and finishing practices and will keep this field dynamic rather than static for a long period of time to come.

## Spring-Needle Feed

(*Continued from page 121*)

setting will, however, bend needle beards. The function of the burr, as the name implies, is to clear backing yarn and fibers from the portion of the needles to be engaged by the following stitch wheel. Easy, wiping-blade action precludes wear for long periods of time.

The stitch or loop wheel probably requires more accurate setting than any other burr. It is the last of the burrs ordinarily placed on the outside of the needles. Its multiple functions include feeding the yarn under the needle beards, drawing sufficient yarn to form full stiches, and aiding in controlling the fabric weight.

As shown in Fig. 5, the stitch-wheel blades enter the needles below the beards. The yarn is placed under the beards and is carried upward to a point above the tops of the needles. Taking the yarn above the needles provides sufficient yarn to insure easy clearing of stitches.

**STITCH-WHEEL SETTING.** As stated before, the setting of the stitch wheel is rather critical. The blade nibs must enter the needles low enough to place the yarn under the beards and still rise high enough to provide the necessary slack yarn. The depth to which

# P-s-s-t...

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**PERMEL** ***can give you wrinkle resistance!*** **Aerotex*** Cream 450 combined with PERMEL gives durable wrinkle resistance as well as water repellency. This perfect blend is the new standard of the trade.

PERMEL is durable. Its protection lasts through repeated dry cleanings and launderings.

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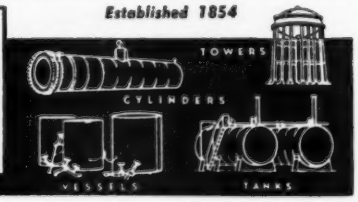



the blades extend through the needles regulates the stitch length and, within certain limits, the weight of the fabric. Yarn carried deep into the needles forms a loose, large stitch and, consequently, an open, light fabric. Conversely, blades making only a shallow entrance form tight, closely knit cloth.

While performing the above operations, the wheel must work against the tension of the yarn it feeds. Because of this condition, in addition to careful checking of the height and depth of the setting, particular care must be exercised in judging the position in which the blades enter the needles. If the blades contact the needles at the point of entry while running without yarn, when yarn is inserted the additional drag will cause the blades to overreach; and a smash may result. When tested without yarn, the needles should ripple at the point of blade exit. Blades cramped in the needles will pinch and bind the yarn.

Considering all the factors mentioned, it is obvious that stitch-wheel blades must be in good condition. The small circumference of the wheel makes rapid rotation necessary, hence hastening wear of the blades.

The most common stitch-wheel-blade fault is the formation of hooks that snag the yarn in much the same manner as the backing wheel might snag it.

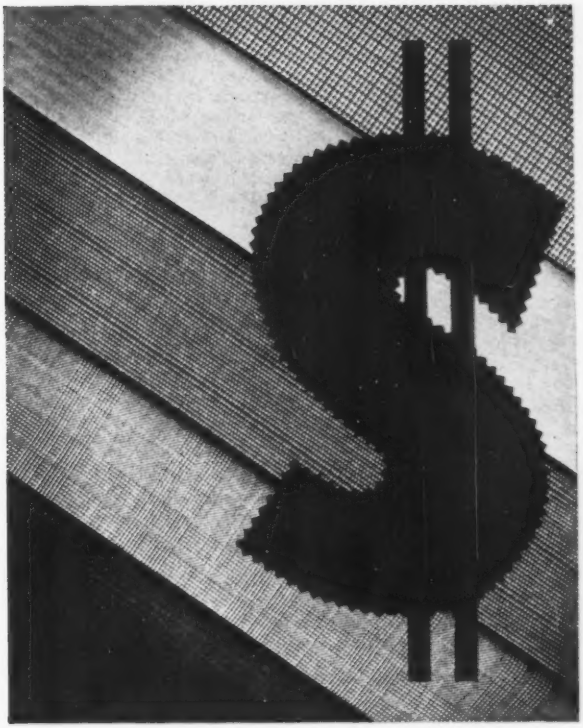
**LANDING WHEEL.** The name of the landing wheel also indicates its function. It "lands" previously formed stitches and backing yarn on the outside of needle beards closed by the presser. Set low, on the inside of the needles, the landing wheel works as a team with the presser, as shown in Fig. 6.

Setting this wheel is fairly easy. It is necessary only to make certain that the wheel meshes properly and that it carries the stitch high enough so that it will not slip back off the needle board, but not carry it high enough to cut the yarn between blades and presser. Depth of setting is originally shallow, for the presser makes it deeper by pushing in the needles.

Wear in landing blades shows in rounding of the tips. Rounded tips permit the yarn to slide off before it reaches its destination. Worn blades should be replaced.

Proper operation of the presser in conjunction with the landing wheel is important, for it is at this point that the new stitch begins to take form. The presser incloses the new stitch yarn (and backing, if present) within the needle beard by pressing the beard into the needle eye. This operation permits the landing wheel

# Plenty of price appeal in "the good rayon suit" market



Men with an eye to cool, well-groomed summer comfort . . . *at a price* . . . vote for the good rayon suit. As a result, this market promises to be the new "gold rush of '49". Enjoy your share of the profits. Celanese Corporation of America, 180 Madison Ave., New York 16.

## the Best rayon suitings contain

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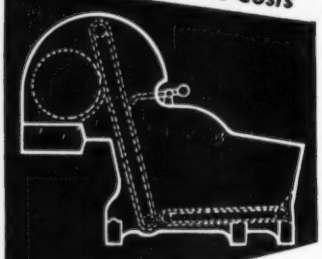

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to encircle the new yarn with the old stitch by bringing the old stitch up outside the beard. This step is the first stage in the formation of the new stitch.

**PRESSER SETTING.** In setting the presser, an angle of about 50° is recommended. This slight angle aids in preventing the presser from rising on its pin. The lower edge of the presser should rest as high on the "hump" of the beard as is possible, without sacrificing positive pressing. Setting the presser in this manner permits high setting of the landing wheel, which lessens the possibility of stitches slipping off the beards. Pressure of the presser against needles should be just enough to insure proper contact and closure of the beards.

Plain-presser wear may be indicated by occasional tucks in the fabric caused by nicks in the pressing surface. Grinding a smooth surface will correct this fault. Worn tuck pressers should be replaced.

The "knock-over" or "cast-off" wheel completes the formation of the new stitch by pushing the old stitches up and off the needles. Fig. 7 shows how this function is accomplished and the resulting appearance of the fabric at the needle line.

Cast-off wheels may be used either inside or outside the needle line. Inside mounting seems to be preferable because the motion is more in the natural direction of the fabric.

**TENSION.** Tension or drag must be considered when the cast-off wheel is set. Both fabric and stitches resist the forward and upward motion of the wheel. The necessarily high position of the wheel in the spring needles makes the meshing security somewhat less than that of some of the other burrs, although the cast-off wheel may be set far into the needles. The critical point, as with the stitch wheel, is at the point of entry. Cramping of the cast-off wheel will cause bent or broken beards.

One defect common to all wheels is the presence of burrs on the blade surfaces that contact the yarn or fabric. Locating the offending wheel is sometimes difficult, as the burr may cut only part way through the yarn, causing holes to break out later as the cloth rises in the take-up. If this is the only defect apparent, it is not necessary to reblade. The burrs may be removed by polishing them on a wire brush.

Blades that have been worn to knife edges will also cut the yarn or fabric. These, of course, have outlived their usefulness and should be replaced.

Some mills change blades accord-

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High Surface Floor Coating

FOR "FASTER" PLAYS ON SAFER GYM FLOORS

DOLCOROCK imparts a brilliant, glossy finish to your gym floor—like an extra layer of crystal-clear quartz!

Having a high coefficient of friction, DOLCOROCK cuts down "slide"—really makes games "faster" by permitting sudden starts and stops while reducing slipping. That means an extra margin of safety for sports participants. Spectators, too, like DOLCOROCK's attractive lustre.

Virtually impervious to grease, dirt, ordinary acids and alkalis . . . easy to apply and maintain . . . equally correct for hardwood, cement and magnesite floors.

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QUALITY YARNS
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SYMBOL OF QUALITY
COAST-TO-COAST

One of a series *of messages to help you increase your understanding of business paper advertising, and its effect on your job.*

# How much would NO advertising cost your company ?

SOME COMPANIES look upon advertising as an expense. When expenses have to be cut, the advertising budget looks like a good place to begin.

The only trouble with that theory is — it won't work.

Advertising can become expensive when you don't use *enough* of it. And "NO advertising" can cost far more than the "saving" it appears to create.

It's like failing to lubricate a piece of valuable machinery. You save the cost of the lubricant — but eventually there's a big repair bill to pay, not to mention your production losses while the machine is idle.

Advertising works something like a machine. It is the application of assembly-line methods to the five basic steps in the manufacture of a sale —

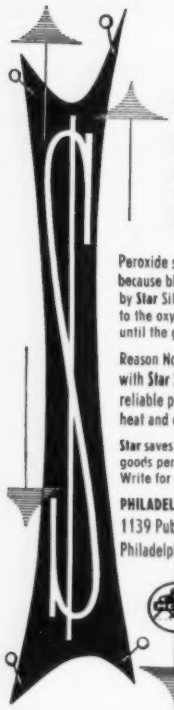
1. **Seeking out prospects**
2. **Arousing their interest**
3. **Creating a preference for your product**
4. **Making a specific proposal**
5. **Closing the order**

Can advertising perform all five of these steps? No, it usually takes a good salesman to handle the last two. But advertising *can* save much of his valuable time.

By mechanizing the *missionary job*, advertising becomes the most efficient method of manufacturing sales at a profit. Especially when it appears in the business press, where it is concentrated among your company's best prospects — *and no one else!*

## TEXTILE WORLD

*is a member of The Associated Business Papers, who have published an interesting folder entitled, "How much does NO advertising cost?" We'll be glad to send you a copy. Also, if you'd like reprints of this advertisement (or the entire series) to show to others in your organization, just say the word.*



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Peroxide supplies go further because bleach baths are controlled by Star Silicate. Star holds on to the oxygen molecules until the goods enter the bath.

Reason No. 2 for bleach savings with Star Silicate—reliable purity makes it stable to heat and dilution.

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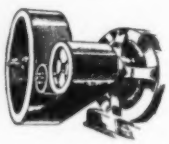
PQ STAR BRAND



BARNES PRODUCTS—"Best for the Job"

## TEXTILE MILL BELTING



GAM-OIL Used for longer life on idler, high-speed and open drives, small pulleys, overloads, shock-loads, and short centers. Resistant to oil and heat. Tanned in Gambier by our longtime process. Greater tensile strength than Oak Tan. High transmitting capacity. Specially curried. Very flexible. Hand processed by skilled workmen.

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BARNES Textile Leather HOUSE

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ing to the time in use, regardless of their condition. On the face of it, it may seem extravagant to discard blades that are still good for many hours of running. However, it is probable that increased production and lower general maintenance expense may offset the higher expenditure for blades. Fabric quality must certainly be higher as a result of this practice.

## TEXTILE Equipment NEWS (Continued)

(Continued from page 156)

### Tenter Frame Designed To Run 250 Yd. per Min.

*HIGH-SPEED OPERATION (250 yd. per min.) and a design said to keep fabric clean are features of this new tenter frame.*

A new, high-speed tenter frame, incorporating many valuable improvements, is now available from Marshall & Williams Corp., Providence 5, R. I.

The new frame, equipped with the company's patented tenter chain, is said to make speeds up to 250 yd. per min. entirely practical. Each clip of the chain is connected to the next by a standard roller-chain link. Drive sprockets and idlers do not touch the body of the clip; roller links transmit the power thrust and absorb resulting wear.

The tenter frame features a completely inclosed delivery end designed to keep cloth clean and to prevent fouling of the drive shaft and drive heads. Antifriction bearings are used at all critical points to lessen driving power required and to increase over-all life. A heavy, one-piece bed plate of channel-iron construction for easy leveling and grouting is said to maintain permanent alignment.

### Tachometer Holds Recorded Speed Rating

Compactness, light weight, complete portability, and unusual accuracy are features claimed for the new Model 4800 tachometer developed by Jones Motrola Corp., Fairfield Ave., Stamford, Conn. The meter is of the mechanical-centrifugal type indicating


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Are you losing thousands of dollars by selling thread, fibres and rags as waste? Make extra profits by cutting such waste and processing it again. You can do this easily and economically with a Taylor, Stiles Rag Cutter.

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Write for descriptive leaflets of the Mellor Bromley Interlock and many other top line machines

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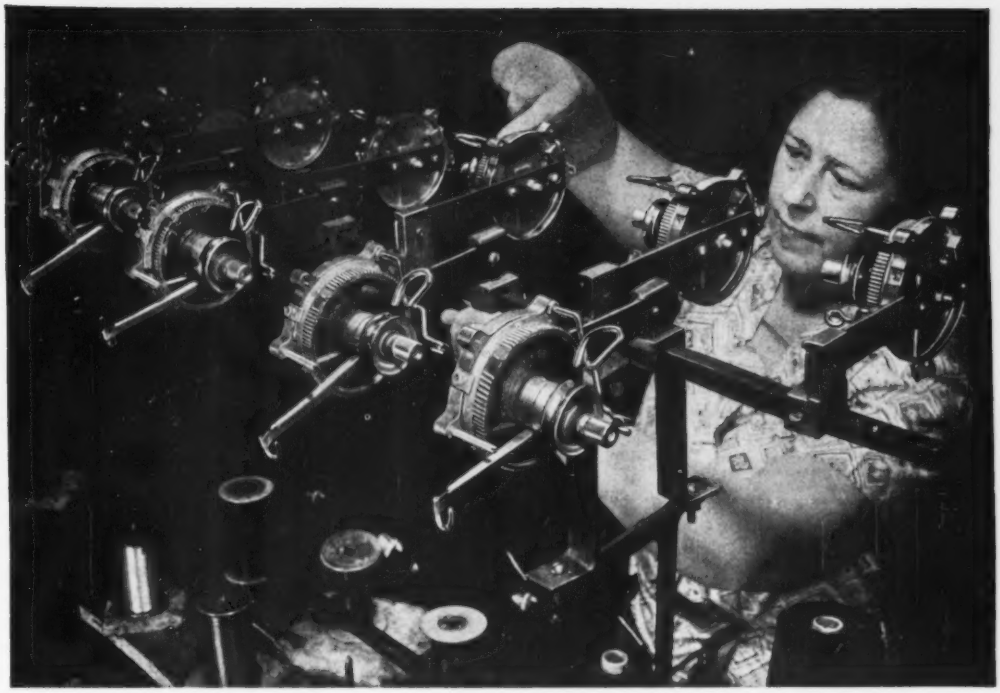

# "HERE'S HOW WE CUT TAFFETA SPOILAGE TO LESS THAN 1%!" *say Frick & Eaton*

Quills wound with uniform tension—important in *any* textile mill—are *doubly* important at Frick & Eaton, commission weavers of the finest-quality fabrics for the most discriminating buyers.

Always on the lookout for new ways to raise their exacting standards still higher—and to keep spoilage down to the barest minimum—Frick & Eaton investigated the *Kidde* Tension Compensator as a means of winding uniform quills of synthetic filament yarns.

*Result?* Spoilage from imperfect quills has been reduced to less than 1%! Scarcely a single shiner has been seen in taffeta since the Compensators were installed.

Of course, quill winding is just one of the many mill processes in which the *Kidde* Compensator yields remarkable results. In warping, plying, dye package and filling winding, the Compensator is *automatically* maintaining uniform tension—regardless of such variables as yarn speed, coefficient of friction, or input tension changes as high as half the tension setting.

**Mail the coupon for descriptive bulletin ➔**

**Kidde**

*The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.*

Walter Kidde & Company, Inc.
391 Main Street, Belleville 9, N. J.
*Gentlemen:*

Please send me descriptive literature on the *Kidde* Tension Compensator.

Name.....
Position.....
Company.....
Street Address.....
City.....
State.....

**Walter Kidde & Company, Inc. • 391 Main Street, Belleville 9, N. J.**

S·P·E·E·D
OPERATIONS

Sizes to ½ h.p.
Ratios to 10:1

LOVEJOY
SELECT-O-SPEED
VARIABLE SPEED TRANSMISSIONS

For processing different sizes, shapes and grades of products . . . matching differences in skill of operators . . . compensating for changes in density, viscosity or consistency of materials . . . synchronizing working parts of machine . . . Lovejoy Variable Speed Controls give fixed speed machines the flexibility to keep up with today's production demands.

*Write for Lovejoy Transmission Catalog*

LOVEJOY FLEXIBLE COUPLING CO.
*Mfgs. of L. R. Flexible Couplings and Dix Universal Joints*
5002 W. Lake Street Chicago 44, Illinois

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THE OIL
FOR
WORSTED AND
WOOL SPINNING

Scours out completely

*Samples and more detailed information upon request.*

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RICHMOND OIL, SOAP
& CHEMICAL CO., Inc.
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with equal accuracy in either direction of rotation.

Three ranges are included in the one instrument, furnishing speed indication from 50 to 50,000 rpm. or 25 to 25,000 ft. per min. Range selection is accomplished by rotating the knob marked L, M, and H for low, medium, and high.

A valuable feature of the new tachometer is a device to permit holding the pointer at measured speeds after the instrument has been discharged. A push button, on the right side of the case, when depressed allows the pointer freedom of movement. Another push button on the left side of the case holds the pointer and records the speed until released.

The instrument, complete with driving tips and peripheral wheel for measuring surface speeds, is contained in an attractive carrying case.

*THREE RANGES of measurement permit use on speeds from 50 to 50,000 rpm. or 25 to 25,000 ft. per min.*

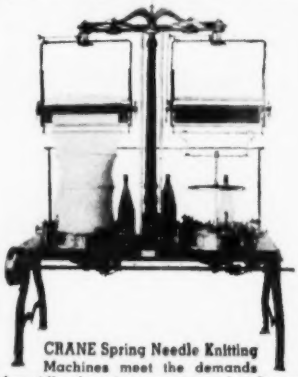
## Unit Heater Has New Coil Design

A new line of unit heaters for steam or hot water, featuring a heating coil said to be revolutionary in design and efficiency, is being produced by Carrier Corp., Syracuse, N. Y. The heating coil which is said to boost efficiency and at the same time to cut operating costs is constructed of one-row Aerofin coils of continuous U-bend copper tubing brazed into steel headers. Deeper and wider fin spacing minimizes resistance to air flow and facilitates cleaning. Deep fins give better heat transfer.

The new line is streamlined in style and light in weight without reducing the durability needed for heavy-duty industrial applications.

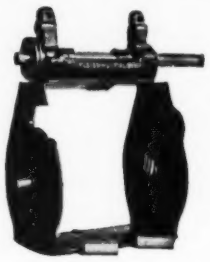
Operational noise has been reduced to a minimum, and even the largest

1870 CRANE 1949
SPRING NEEDLE
KNITTING MACHINES
*Speed - Quality - Low Cost*



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE
MANUFACTURING CO.
LAKEPORT, N. H.



Recondition your
CONER-HEADS

Style #50 Universal Coner Heads can be reconditioned with bronze bushings, new shaft and new pulley at a great saving to you.

*Write for prices and full details.*

Wayne Manufacturing Co.
Honesdale, Pa.
*Manufacturers of Textile Mill Supplies*

**HAYES** new way
... cuts costs TODAY

A Weaver at Jellalabad

## Profit is Greater When Light Metal Beams Cut Costs

Yard-a-day production on primitive equipment has given way to modern high speed production machines.

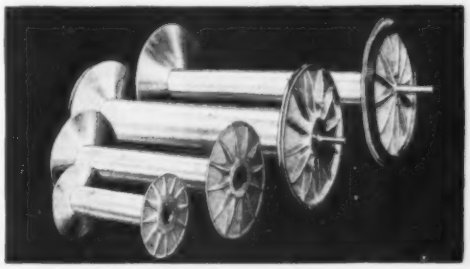
Newest development to enable textile mills to attain the maximum in efficiency on modern equipment at lowest cost are the light metal beams pioneered and produced by Hayes Industries.

These Hayes aluminum and magnesium beams are accurately cast and machined. Perfectly balanced, they rotate smoothly and uniformly without vibration. Flanges and barrels are satin smooth, highly polished . . . cannot splinter, snag or rust . . . sharply reduce rejects . . . when fully loaded with fine denier acetate yarn head deflection is scarcely measurable.

Substantial savings are possible because Hayes beams weigh less than half as much as conventional types. Shipping and handling costs are reduced . . . manpower productivity is increased . . . worker fatigue is lessened.

Hayes Loom Beams, Tricot Beams and Section Beams fit all standard warpers and machines. Shafts of loom and section beams are removable.

*Write or wire for complete information on Loom Beams, Section Beams and Tricot Beams. Ask for Catalog 1-21.*



**HAYES**

**INDUSTRIES, INC.**

**HOME OFFICE: Jackson, Michigan**

LAGS—CYLINDERS
COMBS—HACKLES

Large stock on hand furnished to your requirements!

Crabb Pins and Lags are better and stronger today than ever. They're produced by micromax heat-treating equipment to assure you any degree of hardness, with complete uniformity. New polishing methods give an extra high polish to the pins.

Our Cylinders, Combs, and Hackles will meet requirements in every way.

Large quantities of these Crabb products are always on hand, orders quickly filled.

Let us help you solve your problems with these products. We invite you to consult our technical staff without delay . . . no obligation for consulting. Write today.

William Crabb & Co.
301 Third Ave.
Newark, N. J.

*HIGH EFFICIENCY and ease of cleaning are said to result from the design of this unit heater.*

units are said to be in the same sound range as the ordinary household electric fan.

The design is reported to make the suspended unit easy to install. For service, the whole unit can be disassembled by the removal of only four bolts and four screws; and the coil can be completely cleaned in a matter of a few minutes.

## *Useful* ACCESSORIES *for the* TEXTILE MILL

### Wide-Field Microscopes

Production of a new series of microscopes said to provide a wider field of observation than ever before has been announced by Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y. Consisting of 15 basic models that can be interchanged into 58 different combinations for research, industrial, and educational uses, the microscope's optical systems are completely sealed from dust. Eyepieces, objectives, and illuminators are are also of new design.

### Metallic Filter Medium

A unique metallic filter medium which consists of two precision-perforated metal sheets has been developed by W. S. Rockwell Co., 200 Eliot St., Fairfield, Conn. Each sheet is perforated with holes of about 0.045-in. diameter spaced to provide about 120 holes per sq. in. One of these sheets is then superimposed on the other and so aligned that the unperforated portions of the top sheet block off the holes of the bottom sheet. The new filter is available in many metals and can be supplied in any required shape. The main advantages claimed are resistance to plugging and structural sturdiness.

### Basic Air Compressor

An air compressor that can "grow" to meet expanding requirements for air has been announced by Air-Flo Compressor Co., Akron, Ohio. The new basic compressor uses 18 principal parts to construct a line of 48 different models of 1-, 2-, 3-, 4-, or 6-cylinder pumps in single- or 2-stage types. The additional parts can be purchased as requirements expand. The compressors are available in sizes from ½- to 40-hp. with 2.5- to 275-cfm. capacity at 30- to 300-lb. pressure in vertical, V-type or side-angle construction. Single, twin, or radially staggered cylinder arrangements are offered.

### Film Projection in Daylight

The B-C Scope, an apparatus which eliminates the need of a darkened room for all kinds of projection, has been announced by Burleigh Cashman Co., Franklin, N. H. It can be used with any type of projector using slides, filmstrips, or 16-mm. moving pictures, both black-and-white and colored. The device fits on a desk or table with the projector and provides its own screen. The standard B-C Scope has a 30x22-in. screen, and when set up for use is 40-in. in depth.

### Ball Transfer Table

A ball transfer table which can handle loads as great as 10,000 lb. has been announced by Sage Equipment Co., 30 Essex St., Buffalo 13, N. Y. All types of packages, cartons, etc. with flat bottoms can be accommodated. The unit enables articles to be removed without interrupting a continuous flow. The table is built to individual requirements and specifications.

### Vertical Pump Motor

A vertical-pump motor designed for application to practically all types of turbine pumps has been announced by U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles 54, Calif. The motor has an interchangeable base to permit an increase or decrease in horsepower without remachining or exchanging the pump head. A waterproof housing and downdraft ventilation are also featured in the new design.

### Corrosion-Resisting Repair Cement

A thermosetting resin called Carbo-Fix for use as a corrosion-resisting repair cement has been developed by Carboline Co., 7603 Forsyth Blvd., St. Louis 5, Mo. The cement is unaffected by most chemicals but is attacked by sulphuric acid in concentrations over 45% and by nitric acid. It will adhere to iron, steel, and glass; and the repair resin sets at normal room temperatures.

### Pressure-Reducing Valve

A new type of high-pressure reducing valve which employs the internal pilot

# Bahnson AIR CONDITIONING

**FOR EVERY TEXTILE NEED**

Unit system or central station system—evaporative cooling or refrigerative cooling—for new, modernizing or expanding plants—for processing natural or synthetic fibres.

The Bahnson Company has specialized for 34 years in the design, engineering, manufacture, installation and service of industrial air conditioning—offering any type of humidification or air conditioning system required for the varied needs of the Textile Industry.

Bahnson System
AIR CONDITIONING ENGINEERS

S. C. STIMSON
A-3 VIRGINIAN APTS.
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COLORED
RAYON
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We can furnish most counts of the raw rayon for prompt delivery in color.

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CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I

BRANCH OFFICES:
Empire State Bldg., 5th Ave.
New York 1

3701 North Broad St.
Philadelphia 40

★

piston construction has been announced by Leslie Co., 187 Delafield Ave., Lyndhurst, N. J. The valve is designed for steam, air, or gas service. It handles inlet steam pressures from 300 to 1,500 psi. and air or gas inlet pressures from 300 to 3,000 psi. Maximum inlet temperature is 1,000° F. The valve is available in sizes 1-, 1¼-, 1½-, and 2-in. with series 90 or 150 flanges or welding ends.

### Metal-Cased Precision Switch

A simplified mounting for both basic switch and metal housing which provides ease of installation and connection is featured in a new model precision switch developed by Unimax Switch Div., W. L. Maxson Corp., 460 W. 34th St., New York 1, N. Y. A die-cast gasketed aluminum housing totally incloses and affords sealed protection for the basic switch against splashing oil, moisture, and abrasive. Independent mounting of switch and housing permits ease of connecting terminals and of making circuit changes.

### Plastic-Bristled Push-Broom

A push-broom which employs polyestrene plastic bristles set in four rows instead of the conventional tufts has been announced by Modglin Co., Inc., 3235 San Fernando Rd., Los Angeles 41, Calif. The broom is said to be unaffected by water or mild solutions of acids and alkalis. Long-wearing qualities of the plastic also adapt the broom for use on hard and rough surfaces. The new broom is available in 18- and 24-in. sizes.

### Gas-Powered Fork Truck

A new, compact, gas-powered fork lift truck which lifts 2,000-lb. at 24-in. from the heel of the fork has been announced by Traft-R-Lift Corp., 605 N. Aberdeen St., Chicago, Ill. The truck is 28 in. wide by 61 in. long by 60 in. high and has a turning radius of 67 in. The 4-cylinder, water-cooled engine is capable of handling full loads up inclines as steep as 15°. Speeds up to 10.9 mph. forward and 8.9 mph. in reverse are provided. Most of the exhaust fumes are eliminated by a return motor intake arrangement.

### Heavy-Duty Industrial Vacuum Cleaner

A heavy-duty vacuum cleaner which can pick up wet and dry substances simultaneously has been developed by Breuer Electric Mfg. Co., 5100 Ravenswood Ave., Chicago 40, Ill. A self-cleaning air filter eliminates time-consuming stoppages. The unit can be changed from suction to blowing by the movement of a lever. Built in four sizes, the vacuum cleaners can move from 200 to 360 cu. ft. of air per min. Tank capacity is 60 gal. for less frequent emptying.

### Hydraulic Conversion Device

A hydraulic conversion device for small electric motors and internal combustion engines has been developed by Twin Disc Clutch Co., Rockford, Ill. The device has been designed especially for Worthington QD V-belt sheaves. Advantages of no stalling, non-transmission of shock loads, smooth and rapid acceleration, and ease of installation are claimed. The models are designated according to the size of the small hydraulic coupling used and are packaged in five sizes.

### Rotary-Type Valve

A new, rotary-type valve to provide maximum efficiency on hydraulic controls for Reeves drives is now available from Reeves Pulley Co., Columbus, Ind. The valve is an exclusive feature of the hydraulic control which permits automatic speed regulation for synchronization of different machines and separate sections of a single machine; maintenance of control tension and winding speeds; and maintenance of uniform pressure, liquid level, or other variables. The valve eliminates lateral motion of the stem and prevents oil leakage.

### Light-Duty Industrial Cleaner

A four-purpose hand-type industrial cleaner which can vacuum, blow, spray or dry has been developed by Ideal Industries, Inc., Sycamore, Ill. The unit has a ½-hp. continuous-duty universal-type motor with permanently-sealed ball bearings. Weight of the cleaner is 8¼ lb. without the 20-ft. cord. The blower nozzle is furnished as standard while other attachments are available for the other three adaptations.

### Dry-Chemical Fire Extinguisher

A handy dry-chemical fire extinguisher containing two pounds of Ansul Plus-Fifty dry chemical has been designed by Ansul Chemical Co., Marinette, Wis. The chemical is said to be nontoxic, a nonconductor of electricity, non-corrosive, and non-abrasive. It does not require periodic recharging, and a unique design feature makes the unit ready for instant use the moment it is removed from the mounting bracket.

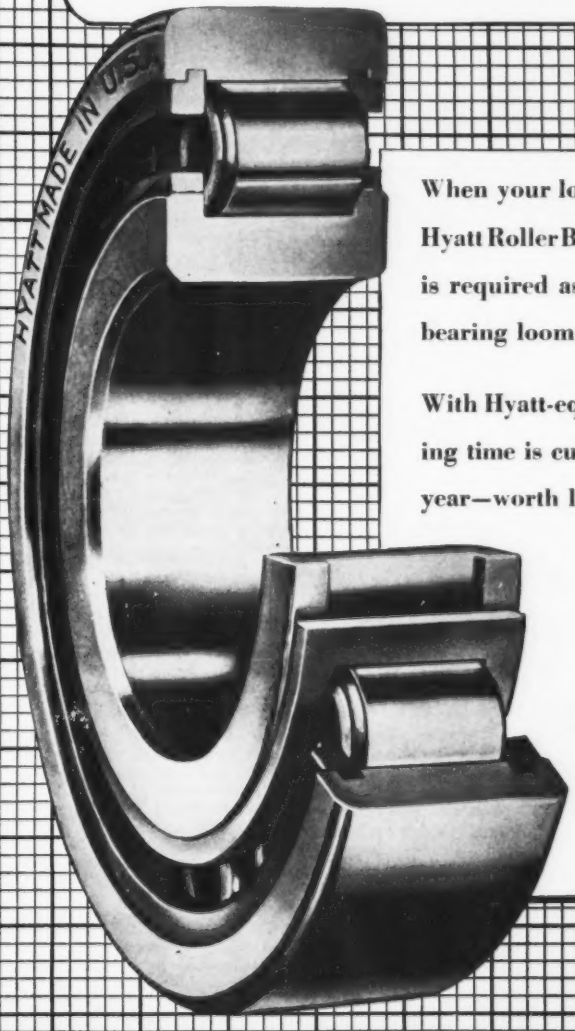
### Self-Locking Cap Screw

A self-locking cap screw which eliminates the use of lock washers has been announced by Diamond Head Screw Corp., 6715 Hollywood Blvd., Los Angeles 28, Calif. A nylon insert set into one side of the threaded segment of a standard cap screw provides the thrust needed for adequate locking. Advantages claimed include long life with repeated usage, elimination of assembly problem of washers, high resistance to heat, and resistance to ordinary liquids and solvents.

### Hot-Water Generator

A high-capacity hot-water generator for use in commercial heating and industrial applications has been announced by Cleaver-Brooks Co., Milwaukee, Wis. The units are available in B.t.u. outputs of 550,000 and 730,000. They are completely automatic and are built in oil- or gas-fired models. Over 80% efficiency is claimed due to the four-pass construction. Exhaust gases can be carried away by any existing chimney, and all units are equipped with sturdy safety controls.

# Less Lubricating Required With Hyatts




When your looms are equipped with Hyatt Roller Bearings, less lubrication is required as contrasted with plain bearing loom oilings.

With Hyatt-equipped looms, lubricating time is cut down to a few times a year—worth looking into.

Let us tell you more about these economies. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

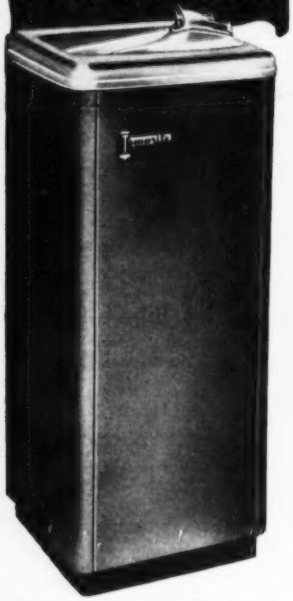
**HYATT ROLLER BEARINGS**

# SMART

**STREAMLINED STYLING in the New**

# TEMPRITE

**DRINKING WATER COOLERS**



**1. Smart,** streamlined styling blends harmoniously into all surroundings. **2.** Effortless finger-tip pressure produces a steady stream of perfect-temperature drinking water. **3.** No spouting, no splashing, no annoying fluctuations in water flow. **4.** Bubbler design gives maximum sanitary protection.

*User Protected by Temprite's 5-Year Warranty Plan*

*All models meet requirements of the National Bureau of Standards and Underwriters Laboratories, Inc.*

**Write for name of distributor in your neighborhood.**

**Manufacturers of water cooling equipment since 1929.**

**TEMPRITE PRODUCTS CORP.**

**37 PIQUETTE AVE. DETROIT 2, MICH.**


# DYES & CHEMICALS

## Fungicide Now Available in Dust-Free Pellets

Dowicide G, water-soluble germicide and fungicide for effective control of micro-organisms, is now immediately available from The Dow Chemical Co., Midland, Mich., in hard pellets comparatively free from dust. This purely physical change from flake to pellet was developed to control the dust and to facilitate handling the salt during its application. The small cylindrical pellets are compressed to one-fourth the volume of the original flake.

*DOWICIDE G in new pellet form will be packed in 200-lb. Leverpak fiber drums marked to distinguish them from the flake.*

## Detergent Useful In Hard or Soft Water

A new synthetic detergent of the alkyl-aryl-sulphonate type, Kamenol D, has been introduced by the Kamen Soap Products Co., Inc., Barberton, Ohio.

The detergent is a "soapless" soap for hard or soft water furnished in white-bead or slurry-paste form which is good in salt solutions. It has highly active ingredients which are clear and soluble in hard or soft water of all proportions. It is active in extremely low concentrations and non-irritating to the skin. It is said to form rich, foaming suds, and to have excellent dispersing properties.

Kamenol D mixes well with other ingredients and will not cake, it is claimed. It flows freely, is perfectly stable and softens water promptly and effectively.

## Ten New Dyes Announced By General

Ten new dyestuffs for various fibers have been developed by General Dyestuff Corp., 435 Hudson St., New York, N. Y. Some details of the new products follow. Further detailed information and color cards are available from the company.

Rapidogen Red IGG is an azoic compound, soluble in caustic soda, which after printing and acid ageing develops in the form of an insoluble dyestuff said to have superior wet-fastness properties and very good fastness to light.

Katigen Cutch Brown RN Conc. CF is a sulphur dyestuff which produces yellowish shades of brown. Color has fairly good light fastness and good wash fastness on cotton and rayon yarn, raw stock, or piece goods in practically all types of dyeing equipment.

Diamond-Blue-Black EBS Extra CF is a mordant dyestuff suitable for application to wool by the top-chrome and chrome-mordant methods. This new product has been much improved in solubility, and its usefulness for the production of navy blues and blue blacks has been greatly increased.

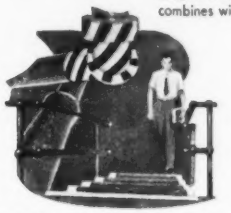
Acid Anthracene Red GA Extra Conc. CF is a neutral-dyeing acid dyestuff which produces bright scarlet-red shades with all the characteristics of a milling color. The dye has fairly good fastness to light and good fastness to washing, fulling, water, crocking, carbonizing, decatizing, and pressing.

Rapid Fast Red RH Powder is an azoic compound, which after printing and ageing develops in the form of a bright red pigment with good fastness properties. The powder dissolves readily with caustic soda, is stable in the print paste, and couples rapidly during ageing. Coupling takes place either in acid fumes or in neutral ageing if it is to be applied with vat colors.

Supramine Yellow 3GLA-CF is a level-dyeing acid dyestuff which produces bright greenish shades of yellow. This new product is a bright, well-leveling yellow which is fast to light, has fairly good fastness to washing, is very fast to hot pressing, stoving, decatizing, and carbonizing. Fastness to salt water is fairly good, better than most acid dyes.

Fast Orange Salt GCS is the diazotized and stabilized salt of Fast Orange GC Base. It is soluble in water and couples directly with naphtholates to form insoluble naphthol colors. The use of fast color salts in naphthol application relieves the dyer or printer of the necessity of diazotizing the bases and simplifies the preparation of developing liquors and print pastes. The dye yields bright orange shades with most naphthols. On grounds prepared with

**SHEET SEWING ROOM** at Dan River Mills. In this area of critical seeing tasks, Color Conditioning combines with good light to aid visibility, improve the quantity and quality of output, and reduce accidents.



**SAFETY!** Du Pont Safety Color Code "points up" hazardous areas . . . helps prevent injury. Colors and symbols quickly identify first aid and fire protection equipment.

**MORALE!** Pleasant surroundings give employees a "lift," pay off in better morale, better care of equipment. In cafeterias, restrooms, offices, etc., COLOR CONDITIONING imparts an agreeable, efficient atmosphere.

**SERVICE!** A Du Pont maintenance painting expert is ready to discuss COLOR CONDITIONING with you . . . show you how it can be applied to your buildings.

# DU PONT COLOR CONDITIONING
## works at Dan River Mills

DAN RIVER MILLS, Danville, Va., one of the world's largest textile mills, put color to work four years ago. Benefits were apparent in a short time. Employees said weave and spinning rooms "seemed cooler," that color lessened eyestrain on delicate work around machines, let them *see* what they were doing. Result: increased production, lower accident rate, better employee morale.

Color Conditioning can work for you . . . regardless of your business. You may make fine lace or heavy machinery, in an old or modern building. Whatever the case, it *pays* to help employees see better, feel better, work better . . . through Du Pont Color Conditioning.

And Color Conditioning costs no more than ordinary maintenance painting . . . *less* in the long run. Mail coupon for full information. No obligation, naturally.

DU PONT

**BETTER THINGS FOR BETTER LIVING . . .**
***THROUGH CHEMISTRY***

**E. I. du Pont de Nemours & Co. (Inc.)**
**Finishes Division**
**Wilmington 98, Del.** Dept. T-93

Please send me, without obligation, your 32-page book, "Color Conditioning for Industry."

*Name*_____

*Title*_____

*Firm Name*_____

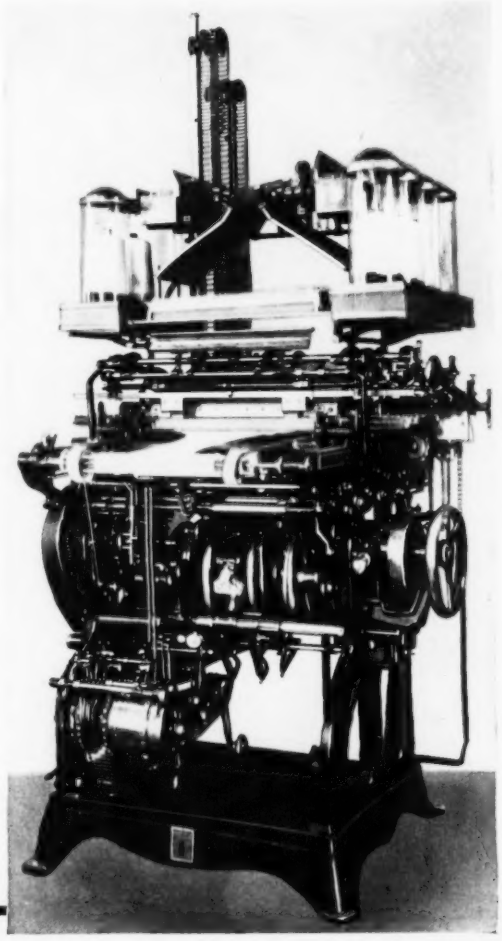
*Address*_____

*It takes a Quality Product to Produce Quality Hosiery!*

# WILDMAN

**Single-head, Single-unit, Full-fashioned**

## HOSIERY MACHINE

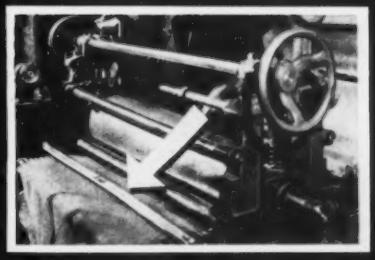


It takes a machine which embodies the quality features that this one does:—

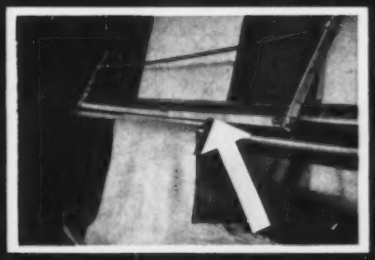
- A machine that makes stockings of the finest gauges EVERY DAY EVERYWHERE, regardless of season or locality because it is not affected by temperature or atmospheric changes.
- A machine that knits the entire stocking in one operation, perfectly matched from top to toe.
- A machine that takes silks, cottons, synthetics with equally perfect results.
- A machine that comes to you completely assembled and starts producing stockings 3 hours after it reaches your floor.
- A machine that must be your next choice for better quality and greater production.

WILDMAN MFG. CO., Norristown, Pa.

# Do you have static trouble...



**HERE?** On this Peralta machine at Broadalbin Knitting Company, Broadalbin, N. Y., installation of an Ionotron reduced spoilage 50%, boosted production 10%, cut operating time 10%, and increased wool card quality.



**HERE?** Installing this Ionotron in the Triangle Finishing Corporation's plant, Johnstown, N. Y., eliminated cloth swing stoppages caused by static electricity — made possible better cloth folding — reduced total stoppages throughout the plant by 20%.

**HERE?** On this industrial ironer at the Cameo Curtain Manufacturing Corporation, the Ionotron quickly proved an important factor in eliminating static troubles in the production of nylon marquisette curtains. It operates continuously without expense.

**HERE?** This "picture" might be a tape condenser of a wool card, or a drawing frame delivery unit, a finishing machine, hosiery boarding machine, or elastic thread processing equipment. Ionotrons have solved static problems on all.

# To get rid of it, send coupon!

**Without humidity, without power connection or operating expense, and without contact with the work — the Ionotron continuously drains away static charges . . . eliminates or greatly reduces bunching, lapping, and other troubles with fibres and fabrics. Find out how it works — send for free bulletin today!**

*Dept. U-8, U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.

Please send illustrated bulletin describing uses of the Ionotron Static Eliminator in textile operations.

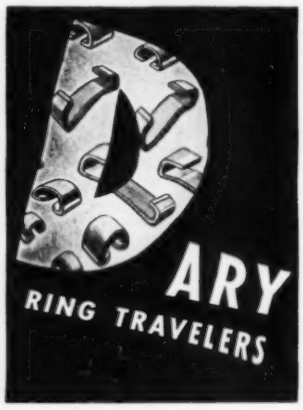
NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

*Inquiries from Canada and British Commonwealth should be addressed to Eldorado Mining & Refining (1944), Ltd., Ottawa, Ontario, Canada.




A Ringing Sensation!

On spinning rings everywhere Dary Ring Travelers have a sensational reputation for long life at higher spindle speeds.

Fine workmanship, a tradition at Dary, plus the best materials *and* the famous Dary Process combine to make the travelers in the blue tin favorites year in, year-out!

Get to know your nearest Dary representative *now*, and you'll get to know real service!

PROCESSED
SYMBOL OF SUPERIORITY

THE DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

John E. Humphries, Box 843, Greenville, S. C.
John H. O'Neill, Box 720, Atlanta, Ga.
James H. Carver, P. O. Box 22, Rutherfordton, N. C.

naphthol AS-SG, a maroon shade is obtained, and with naphthol AS-LB, a khaki shade. The most useful combinations possess good to very good fastness to washing, fairly good to excellent fastness to light, fairly good to very good fastness to chlorine, and fair to very good fastness to hot pressing.

Indanthrene Printing Violet RR Extra Paste is specially standardized for printing. It is a finely dispersed, nonsettling, non-drying, grit-free paste. The paste fixes well on cotton and rayon. It produces a bright shade of violet, has good to very good fastness to washing, and very good fastness to chlorine and light.

Alizarine Blue SAP-CF is a level-dyeing acid dyestuff which produces bright medium-blue shades with very good fastness to light. The dye is very widely used for dyeing worsted piece goods, hats, carpets, carpet and knitting yarns, etc.

Fastusol Blue LRLA is a new homogenous direct dyestuff. It produces fairly bright reddish shades of blue on cotton, rayon, and other cellulosic fibers. In a medium depth of shade, the light fastness is very good to excellent on cotton and is excellent on rayon. This superior light fastness is affected relatively little by urea-formaldehyde, although somewhat more by melamine-formaldehyde crease-proofing aftertreatments. In other fastness properties, Fastusol Blue LRLA does not materially differ from other fast to light direct blues.

## Mill Maintenance

### Maintenance-Crew Tasks Should Be Pre-Assigned

With maintenance crews on a one-shift basis where plants operate on a three-shift schedule, considerable repair and replacement work must be arranged on an assignment plan. Such scheduling requires that each maintenance man have something to do as soon as his shift starts. Knowing what to do and doing it without the need of further instruction determines the dependability of a crew member.

Our maintenance crew starts work two hours after the first shift starts and catches the first two hours on the second shift. The third shift is without regular maintenance personnel, and breaks on this shift are left unless they are of such importance that a maintenance man is called out to repair them.

With assignments scheduled, each person usually knows what he is to do for the first few hours of his shift. The worker responsible for replacing burned out fluorescent light tubes, for example, starts out with a supply of tubes in the production area adjacent to the shop. He goes from one aisle to the next and one department to the next in a regular route. This is a daily task and is not to be neglected. Regardless of other work assignments that may have been left over from the day before, replacements of burned-out light tubes is the first task for the new day.

This same assignment procedure is followed with all regular jobs and all maintenance men. Of course, breaks left over from the third shift are the assignments of some of the crew. In all cases, though, each man in the crew knows exactly what he is to do at the beginning of the shift; and there is no loss of time as a result of uncertainty. *(M-5)*

### Waterproof Primer Saves Masonry Paint

Peeling of paint on brick, stucco, or concrete is usually caused by the chemical action of lime in the masonry attacking the paint film. The peeling occurs first, and worst, around cracks in the masonry because moisture gets into the cracks, and lime becomes active only when moisture is present.

The way to make a paint job last longer on exposed masonry is, of course, to stop up cracks so that moisture cannot enter them.

It is easy enough to fill the big cracks that can be readily seen. It is the small cracks that are hard to stop. Paint will cover them when new; but as it ages and dries out, it shrinks. The small cracks are then exposed.

The best solution is to seal the cracks and waterproof the surface before the paint is applied, according to information given by Truscon Laboratories, Inc. In this way, the small cracks are filled and no moisture can get to the lime to activate it.

Penetrating waterproofing primers that will do the job are available. All that is necessary is to clean the surface to be painted as it would normally be cleaned for a new paint job, fill all large cracks, and scrub on the waterproofing primer. In order to deposit as much of the primer as the surface will take, the coat should be applied to a thoroughly dry surface during warm weather and should be either scrubbed in or brushed in thoroughly. The purpose is not only to cover the surface, as in painting, but also to help the primer penetrate the surface.

AS you suspected, it's that panel of Taylor Fulscope Time Schedule Controllers. They're carrying out the whole size cooking operation automatically! The operator has just loaded a cooking kettle, pushed the starter button, and stepped out of the picture. The Fulscope Indicating Controller on the wall maintains the proper storage temperature.

This scene in one of the south's largest denim mills shows how Taylor Accuracy is helping to keep quality up and costs down. Once the ideal cooking schedule is determined, the Taylor control system faithfully reproduces each succeeding batch of size. It prevents overcooking and overboiling and insures uniformity. And the dual-case construction of each Fulscope permits easy accessibility to both control mechanism and cam and trip mechanisms.

This system is only the first step toward automatic control of the entire slashing operation. Ask your Taylor Field Engineer for further information on our control systems for all four steps: *size cooking, storage kettle temperature control, size box level control,* and finally, *slasher cylinder control.* Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

▼ ▼ ▼

*Instruments for indicating, recording, and controlling temperature, pressure humidity, flow and liquid level.*

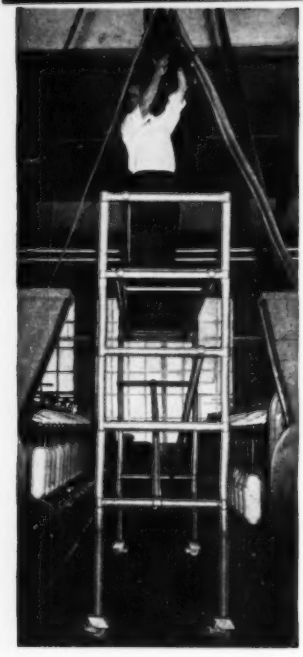
**Taylor Instruments**
**MEAN**
**ACCURACY FIRST**
**IN HOME AND INDUSTRY**

*Speed up overhead maintenance with*

Aluminum Alloy

**"UP-RIGHT" SCAFFOLDS**

Mobile 10' span set up by one man in one minute



**Cut maintenance costs on lighting fixtures, walls, ceilings, overhead machinery and piping, ventilating and heating installations. Instantly adjustable to desired working level. Bridges obstacles up to 6½ feet in height. Stronger than structural steel yet one-third the weight. No wrenches, wing nuts, bolts, loose parts.**

***Write for Descriptive Circular***

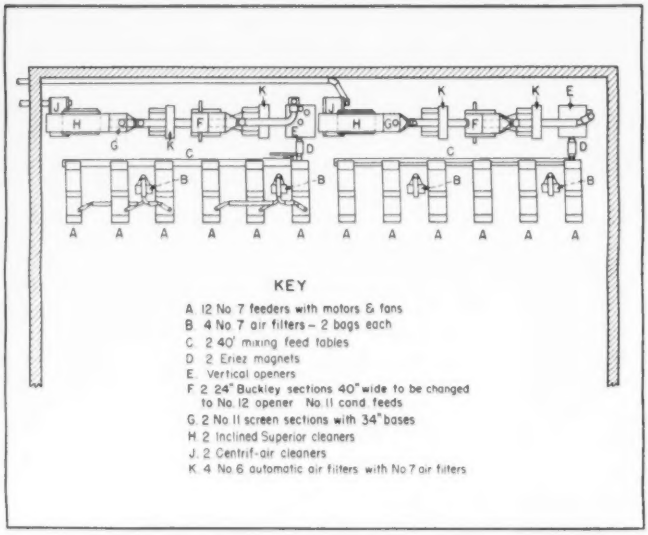
**UP-RIGHT SCAFFOLDS**

**ROOM 118 • 1013 PARDEE ST.**

**BERKELEY, CALIFORNIA**

***Offices in All Principal Cities***

***BALE MIXES of tremendous size can be laid down in the 75x100-ft. space in the new opening room at Anchor Duck Mills, Rome, Ga.***


KEY
A. 12 No. 7 feeders with motors & fans
B. 4 No. 7 air filters – 2 bags each
C. 2 40' mixing feed tables
D. 2 Eriez magnets
E. Vertical openers
F. 2 24" Buckley sections 40" wide to be changed to No. 12 opener No. 11 cond. feeds
G. 2 No. 11 screen sections with 34" bases
H. 2 Inclined Superior cleaners
J. 2 Centrif-air cleaners
K. 4 No. 6 automatic air filters with No. 7 air filters

***TWO OPENING LINES each consist of six feeders delivering to a vertical opener, a No. 12 opener, screen section, Superior cleaner, Centrif-Air cleaner.***

## *New* OPENER ROOM *Has Large Blending Space*

# What is the opposite of "ABSENTEEISM"?

WANTED: a new word to describe employee-performance records when air conditioning is part of the manufacturing picture.

Only a brand new word could suggest that combination of regular, and dependable attendance, high morale, low turnover, loyalty and high efficiency that air conditioning brings to plant operation.

In the textile industry, these benefits can be translated directly into profits. They mean improved quality of work . . . fewer rejects and seconds . . . steady, year 'round production . . . increased summertime production, etc.

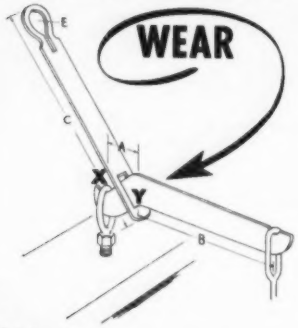
Today, York-equipped air conditioning installations are bringing these benefits to an increasing number of progressive textile mills. York engineers —experienced in textile operations—are prepared to supply your plant engineer, consultant and contractor with specific information—as to equipment, capacities and performance to fit your particular needs.

York Corporation, York, Pennsylvania.

**YORK** *Refrigeration and Air Conditioning*

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

## It pays to know the whereabouts of WEAR




WHAT you don't know CAN hurt you! It can be extremely painful. Excessive wear of stirrups and levers in your drafting assemblies, especially when *not* noticed, prevents GOOD SPINNING.

For example, excessive wear at points "X" and "Y" above, often unseen, will destroy proper weighting ratios. Careful inspection of *stirrups, levers and lever screws* should be made regularly, and worn parts replaced immediately.

DIXON makes a large line of weighting appliances designed to function perfectly and produced in volume. The savings effected by this volume production are passed along to you. Order your part from Dixon now and compare for quality and price.

### DIXON Manufacturers

➡ 1. More than 350 different stirrups, each with varying lengths—"C"—and special head openings —"E"—to properly fit over and lock on saddles.

➡ 2. More than 275 different levers with varying lengths—"B" and "A"—to allow for any desired leverage.

➡ 3. Over 35 different lever screws with varying diameters, threads per inch and loop lengths. Quick delivery of spare parts is possible in most cases. Be sure you know your saddle assemblies are doing their job.

*"It Costs so little and Saves so much"*

**DIXON**
LUBRICATING SADDLE CO
*Established 1876*
BRISTOL — RHODE ISLAND

Southern Sales Representatives:
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P.O. Box 1474 Greensboro, N. C.

J. W. DAVIS, Mfg'rs Agent
P.O. Box 745 Columbus, Ga.


# Books of Interest

## Small Business and Its Place in U. S. Economy

SMALL BUSINESS: ITS PLACE AND ITS PROBLEMS, by A. D. H. Kaplan; McGraw-Hill Book Co., 330 W. 42nd St., New York 18, N. Y.; 282 pages, $3.25.

This work is a research study conducted under the sponsorship of the Committee for Economic Development. It is a detailed appraisement by means of statistics, history, and opinion of small business in the American economic picture.

After surveying the various classifications by the Departments of Commerce and Labor and by Congress as to what small business is, the author arrives at a composite definition covering size, management, financing, and area of operations. On the score of size, he sets arbitrary limits of $1,000,000 for annual volume of business, $500,000 for total assets, and 250 employees for personnel.

Throughout the book, there is much carefully compiled statistical matter which discloses the position and behavior of the small-business section of the business community. The author presents intelligent analysis as he proceeds through maze of statistics, but the reader is supplied with so complete a factual picture that he can come to his own conclusions if he is disposed to do so.

## A Treasury of Swedish Design

THE DECORATIVE ARTS OF SWEDEN, by Jona Plath; Charles Scribner's Sons, New York; 248 pages, 500 illustrations, 32 pages in color, $10.00.

This volume is by an American-trained artist of Scandinavian descent and represents several years of research in Sweden with the cooperation of Swedish authorities and museums. Although it covers all the peasant household arts (including work in wood, glass, metal, and ceramics), it is at its best in the large section devoted to textiles. Miss Plath is perhaps best known in the United States for her work in textile design, and she does a complete job for Swedish ancient and modern textiles since nearly a quarter of the book is devoted to them. From a design point of view, the other sections contain stimulating material for adaptation to textile design.

The Swedish peasant was unusually prone to decorate his household equipment; and beds, chests, glassware, etc., carry distinctive patterns of character and beauty. The early textiles shown in this book include large wall and ceiling hangings, bed and chair covers, mittens, scarfs, purses, towels, etc. They are almost entirely of linen and wool, often combined in effective ways. One type of bed-covering involved the knotting in of unspun fleece wool on a woven linen back to give a shaggy fur-like effect. Simple patterns in these items were made by using wool from black and from white sheep.

The modern textiles, in both printed and woven patterns, have been selected to show the characteristics which are distinctly Swedish.

## Forstmann's Safety Program

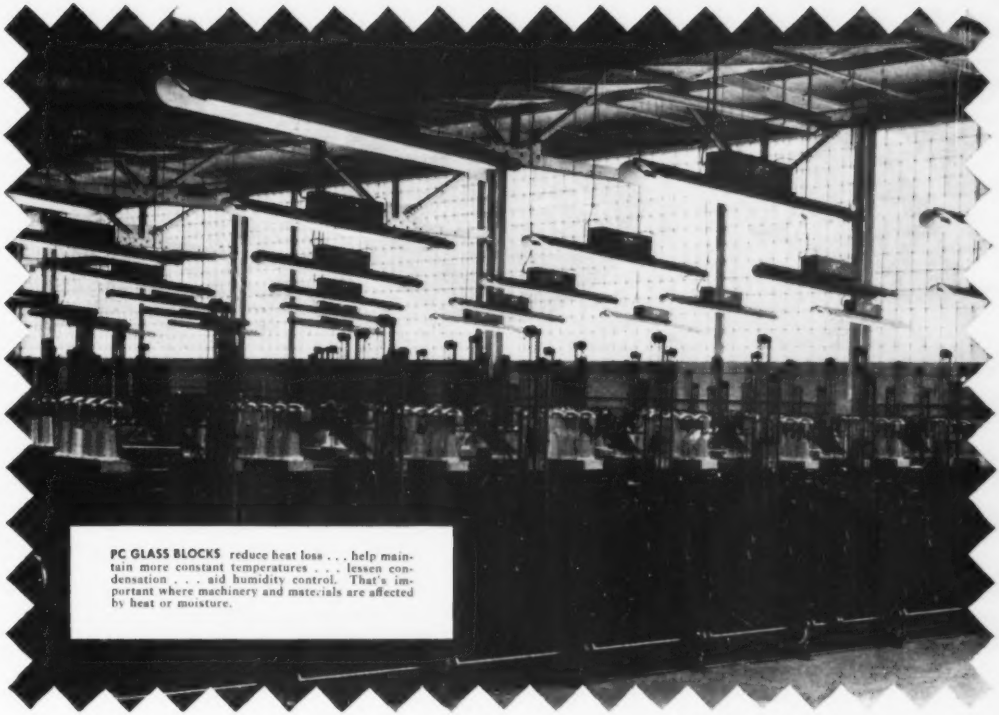
JOINT SAFETY PROGRAM of Forstmann Woolen Co and Local 656 TWUA of CIO, by R. H. Wood and J. J. Pearce, Jr.; Institute of Management & Labor Relations, 77 Hamilton St., New Brunswick, N. J.; 48 pages, 40c.

This is the first of a series of case studies sponsored by Rutgers University. It analyzes the progress of the safety program at Forstmann Woolen Co. over a period of years. In 1945, the program became a joint concern of management and labor represented by Glenn Gardiner and Charles Serraino, respectively. Since then the decline in accident frequency and severity has been marked. The operation is fully analyzed and documented.

## Distribution of Income

WHO GETS HOW MUCH FOR DOING WHAT IN AMERICA, by Keller, Clark, and Rimanoczy; American Economic Foundation, 295 Madison Ave., New York, N. Y.; 32 pages.

The purpose of this brief analysis is to permit the busy reader to make up his mind whether or not the distribution of income and property in the United States is "fair." The year 1944 is taken because it was the most recent year for which moderately complete figures were available. This small book gives simplified highlights of a previously published exhaustive study of national income and helps to set straight some rather widely held misinformation.


PC GLASS BLOCKS reduce heat loss . . . help maintain more constant temperatures . . . lessen condensation . . . aid humidity control. That's important where machinery and materials are affected by heat or moisture.

# How to cut production and maintenance costs

*It's hollow!* This forms a partial vacuum, or dead-air space, which gives PC Glass Blocks twice the insulating value of ordinary single-glazed windows.

In mills and factories all over the country, PC Glass Block construction has proved to be the practical and economical solution of many production and maintenance problems. Not only that, but judging from what users tell us, the majority of these installations have paid for themselves out of the savings PC Glass Blocks made possible.

The reasons are not hard to find: PC Glass Blocks rarely, if ever, need repairs or replacement. They don't entail the expensive washing of small, individual panes. Nor do they need painting. And their *hollow* construction, with a sealed-in dead-air space between, gives them twice the insulating value of single-glazed windows. This means a big reduction in heating and air-conditioning costs.

What's more, PC Glass Blocks save on artificial lighting, because they admit floods of natural daylight over wide working areas. Their better light diffusion gives workers greater eye comfort. They effectively shut out distracting views and noises. They stop infiltration of grit and dust . . . permit greater privacy.

Save money by replacing your worn, rotted sash with corrosion-resistant PC Glass Blocks. Our specialists will be pleased to consult with you, without obligation on your part. Right now, why not send for our free booklet on PC Glass Blocks for industrial use?

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Without obligation on my part, please send me a FREE copy of your booklet on the use of PC Glass Blocks in industrial buildings.

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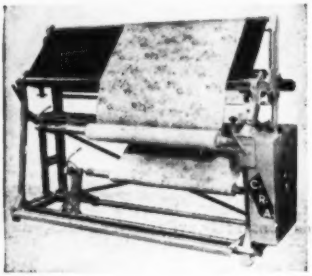
*Distributed by Pittsburgh Plate Glass Company; by W. P. Fuller & Co. on the Pacific Coast, and by Hobbs Glass Ltd. in Canada*

C.R.A. SCORES AGAIN

THE C.R.A. MEASURING AND INSPECTING MACHINE

*FOR FASTER, MORE ACCURATE CHECK ON PIECE GOODS*



**LOOK AT THESE BIG ADVANTAGES**

- New Foot Pedal Control for Variable Speeds
- Eye Level examining . . . machine built lower, more compact
- Exclusive tube release saves time, effort . . . conserves paper tubes
- Simple forward and reverse drive for easy operation

*Illustrated "Fact Folder" on Request Contains interesting information on latest cloth laying equipment.*

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*Internationally Represented* *Cable Address "Cutroom"*

Money-Saving Devices for the Cutting Room

# News of the month

**ACMA Meets at Palm Beach.** Large attendance is expected at the 53rd annual meeting of the American Cotton Manufacturers Association which will be held at Palm Beach Biltmore Hotel in Palm Beach, Fla., on Mar. 31, Apr. 1 and 2. This is the first meeting ever held by this group in Florida. The annual banquet is set for Friday, Apr. 1.

**Oppose Trade Agreements.** Cotton textile mills through Dr. C. T. Murchison, of CTI, voiced strong opposition to the proposal to amend the Reciprocal Trade Agreements Act through elimination of the power of the U. S. Tariff Commission to advise the President on the limits beyond which duties on imports may not be cut "without causing or threatening serious injury" to domestic industries. Other branches of the industry were heard in opposition to various phases of the proposed amendments at the hearings a few weeks ago.

**Spinner-Breeder Conference.** The three-day sixth annual Spinner-Breeder Conference sponsored by the Delta Council will open May 30, in Charlotte N. C. Representatives of the council and of the Southern Combed Yarn Spinners Association completed plans at a recent meeting in Greenville, Miss.

**"Gage" Usable if Called "Circular", Too.** The Federal Trade Commission states that "presently it is not disposed to challenge as improper application of the term gage to women's full-length circular-knit hosiery in showing the number of needles employed per 1½ in. of the needle circle of the knitting machine instead of the total number of needles used in knitting such circular-knit hosiery, provided that wherever so applied, the word gage is accompanied in immediate conjunction and in at least equally conspicuous type by the terms 'circular-knit,' 'seamless,' 'no seam,' or by words or terms clearly indicating that the hose so designated is not 'full-fashioned'." The application to full-fashioned hosiery of the distinctive "gage" seems to be accepted by reason of many years use arising from the

## Textile Calendar

*National Cotton Council, 11th annual meeting, Los Angeles, Calif., Mar. 7 to 9, 1949.*

*American Cotton Manufacturers Association, annual meeting, Palm Beach, Fla., Mar. 31, Apr. 1 and 2, 1949.*

*AATCC, Piedmont Sect., R. E. Lee Hotel, Winston-Salem, N. C., Apr. 2, 1949.*

*American Gas Association, sales conference on industrial and commercial gas, Andrew Jackson Hotel, Nashville, Tenn., Apr. 5 to 7, 1949.*

*National Knitted Outerwear Association, annual meeting, Waldorf-Astoria Hotel, New York, Apr. 7, 1949.*

*American Institute of Electrical Engineers, electronic conference, Statler Hotel, Buffalo, N. Y., Apr. 11 and 12, 1949.*

*Alabama Cotton Manufacturers Association, annual meeting, Hotel Buena Vista, Biloxi, Miss., Apr. 14 to 16, 1949.*

*Knitting Arts Exhibition, Atlantic City, N. J., Apr. 25 to 29, 1949.*

*National Association of Hosiery Manufacturers; annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 25, 1949.*

*Annual Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 25 and 26, 1949.*

*Third Annual International Textile Industries' Exposition, Grand Central Palace, New York, N. Y., May 2 to 7, 1949.*

*Cotton Manufacturers Association of Georgia, 49th annual meeting, Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla., May 4 to 6, 1949.*

*Swiss Industries Fair, Basle, Switzerland, May 7 to 17, 1949.*

*National Cotton Week, May 9 to 14, 1949.*

*National Packaging Exposition, 18th Annual Show Auditorium, Atlantic City, N. J., May 10 to 13, 1949.*

*Carolina Yarn Association, annual outing, Carolina Hotel, Pinehurst, N. C., May 12 to 14, 1949.*

*Tufted Textile Manufacturers Association, annual meeting, Atlanta Biltmore Hotel, Atlanta, Ga., May 26 to 28, 1949.*

*Textile Wet Processing Equipment & Supplies Exposition, 71st Regiment Armory, New York, N. Y., June 6 to 10, 1949.*

*AATCC, Piedmont Sect., Ocean Forest Hotel, Myrtle Beach, S. C., June 24 to 26, 1949.*

*American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 27 to July 1, 1949.*

*American Society for Testing Materials, first West Coast meeting, Fairmont Hotel, San Francisco, Calif., Oct. 10 to 14, 1949.*

*Pacific Chemical Exposition, Civic Auditorium, San Francisco, Calif., Nov. 1 to 5, 1949.*

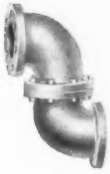
*Cotton-Textile Institute, annual meeting, New York, Nov. 3, 1949.*

*AATCC, Piedmont Sect., Charlotte Hotel, Charlotte, N. C., Nov. 5, 1949.*

*American Textile Machinery Exhibition (and Allied Industries) sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12, 1950.*

# LEAD PIPING

**...keeps**



## Hungry Acids in Line

One of acid's most useful jobs is to serve as the "digestive juice" of the process industries. But, unless properly controlled, acids can be destructive to the "alimentary tracts" of processing systems.

• •

That's why men wise in the ways of handling acids, look to *lead* for protection. And why they look to the leader in lead . . . National Lead . . . for their lead and lead-lined pipe and fittings.

• •

National Lead offers you three types: regular all-lead pipe . . . steel pipe with cold-expanded lead linings . . . and "United Tubond" lead-lined pipe, for extreme pressure, vacuum, temperature or vibration.

• •

In "United Tubond," the lead lining is permanently *bonded* to the steel outer casing. The bore is smooth and seamless. Positive lead-to-lead joints are assured by extending the lead lining over the face of the flange.

• •

The choice depends upon the job. But whichever you choose, *look to the Leader for Lead.* You'll know you're getting all of lead's advantages, engineered by National Lead into pipe and fittings that will fight acid corrosion and mechanical stress . . . and keep hungry acids in line.

## Look to the Leader for Lead

*. . . in everything from lead pipe . . . valves . . . sheet . . . and lead-lined or lead-covered equipment . . . to complete acid recovery plants*

# NATIONAL

## Lead Company

*New York 6; Baltimore 3; Buffalo 3; Chicago 8; Cincinnati 3; Cleveland 13; Pittsburgh 12; St. Louis 1; Boston 6 (National Lead Company of Mass.); Los Angeles 23 (Morris P. Kirk & Son, Inc.); Philadelphia 25 (John T. Lewis & Bros. Co.); Atlanta (Georgia Lead Works, Dist. of Cincinnati Branch); Toronto, Canada (Canada Metal Co. Ltd.).*

You Can Count on
WAK*
COUNTERS

- RUGGED
- ACCURATE
- DEPENDABLE

WE BUILD...
RESET AND NON-RESET

★ Single Pick Counters
★ Double Pick Counters
★ Triple Pick Counters
★ Rachet Counters
★ Rotary Counters
★ Slasher Counters
★ Tenter Counters
★ Twister Counters
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★ Special Counters

"Over 500 mills in the United States, Canada and foreign countries use WAK counters."

*T. M. REG. U. S. PAT. OFFICE

WAK
INDUSTRIES
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characteristic of the flat-knitting machine on which such hosiery is made.

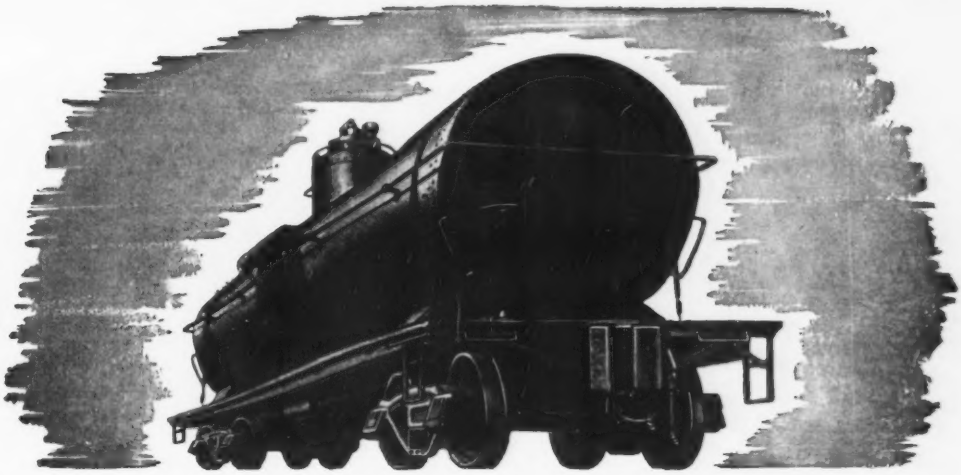
**"Operation Dixie," No. 2.** Textile mills in the eleven Southeastern states will be the first objective in the "revitalized" organizing drive undertaken by the CIO Textile Workers Union of America. The second try with "Operation Dixie" is to be more intense than the one which failed in 1946. This new organizing campaign in the South is better financed than the first one. The committee, headed by Van A. Bittner, is assured of a minimum monthly fund of $120,000, obtained from a ½¢ assessment on all CIO members. The objective is to organize under the CIO banner all of the unorganized workers in the South. This will cover every industry. CIO-TWUA will open a branch of its international headquarters in Atlanta around March 1. It will be located in the building formerly occupied by the Atlanta Chamber of Commerce. President Emil Rieve and other international officials will spend at least half of their time in the Southern office and take an active part in organizing the industry. The keynote of the drive is that Congress will abolish the Taft-Hartley law and write a new one which will contain all the demands of the labor unions. When that is done, the organizing drive will get under way. Big plants will be attacked first. The Southern Textile Workers of America (AFL) is also planning a drive.

**ACTM Hears of Dangers in Path.** At the annual dinner of the Association of Cotton Textile Merchants of New York on Jan. 28, Arthur Besse, president of the National Association of Wool Manufacturers, exposed the unnecessary and dangerous abdication of control over American tariffs and American foreign trade in the American proposals for an "International Trade Organization Charter." The U. S. gives itself just one vote, he pointed out, among many in a body empowered by the charter to invade the realm of private enterprise in many ways. He said, "The time to terminate this supergovernmental agency is now, before it is ever put into effect." Philip D. Reed, chairman of General Electric Co., stressed the fact that the U. S. now had world leadership, whether it wanted it or not, and that constructive measures must be taken in economic, political, and military fields. As more important than the Russian problem, he stressed three main propositions: (1) U. S. must get the peoples of the world to understand each other, to drop falsehood and half-truths; (2) must decontaminate Russia by an economic approach and by rehabilitation; (3) must spread understanding of American ideals and way of life by means of all available channels of communication. "Our job today," said Mr. Reed, "is the public relations of survival." The final speaker before the 350 cotton-textile executives was Murray Shields, vice president of Bank of the Manhattan Co., who spoke pessimistically on current tax proposals before Congress, calling them downright destructive, a "blueprint for a depression," and reflective of lack of economic understanding. He called it incredible, however, that "the American people would permit application of tax policies which would hamstring the most dynamic and productive economy the world has ever seen."

***INCREASED SALVAGE** and collection of an additional 1,000,000 tons of heavy industrial steel scrap is needed to keep the American steel industry moving at the rate which current demands upon it warrant. It is urged that a top official in every plant be appointed "Salvage Director" with right to condemn and sell to local scrap dealers all obsolete machinery, tools, etc. Every industry must take a hand in this drive to speed the day when American steel production is adequate and the country's emergency reserves are safe.*

**Indian Cotton Crop Loss.** BOMBAY, India (*McGraw-Hill World News*)—Spurred by a 21% failure in the estimated cotton crop due to weather, an Indian Cotton Mission has just contracted for 200,000 bales of Uganda cotton worth some $45,000,000 and is shortly to seek a similar arrangement with Sudan interests. Drought in Western India and excessive rains in Central India during the last monsoon season are expected to cut Indian cotton deliveries down to 2,370,000 bales against an expected 3,000,000. In some areas the crop will be barely half average yields.

**Five-Year Flameproofing Research.** A five-year project devoted to flameproofing fabrics will get underway soon in the chemical engineering laboratories of Columbia University, New York. The project, which will be jointly sponsored by the Army Quartermaster Corps and the Office of Naval Research, will be directed by Dr. James M. Church, associate professor of chemical engineering. There is danger of unprecedented casualties



# EMERY PRODUCTS FOR TEXTILES

## TWITCHELL OIL

### FOR WOOL

Twitchell 7410 Wool Oil and Twitchell 7420 Worsted Oil, for lubrication in carding, combing, spinning and weaving operations, are finished oils ready for use, self-emulsifying, easily scourable. Twitchell 7430 most readily scourable oil available.

### FOR COTTON

Non-staining Twitchell Oil 7250 for all finishing, produces fastest rewet, softest hand. Oil 7240 for fast wetting back, medium hand.

Twitchell Oil 7231 (formerly 3X—the long established standard rewetting agent) has the least effect on hand. All three recommended for finishing regular or Sanforized fabrics, for slashing.

### FOR RAYONS

Twitchell Oils 7681, 7685, 7687 adjusted to viscosity specifications, to lubricate knitting and weaving yarns and Twitchell 7620, a coning oil for nylon yarn, are non-staining, easy scouring oils. For crepe yarn soaking, Twitchell 7810 is compatible with starches, gums and other sizing agents.

## FATTY PRODUCTS

### FATTY ESTERS

Emery 2210 Glyceryl Monostearate
Emery 2510 Propylene Glycol Monostearate
Emery 2410 Diethylene Glycol Monostearate
Emery 2221 Glyceryl Mono-oleate
Emery 2301 Methyl Oleate
Emery 2302 Propyl Oleate
Emery 2230 Glyceryl Trioleate
Hyfac 2130 Hydrogenated Fish Oil Glyceride

### FATTY ACIDS

Emersol 120 Standard Stearic Acid
Emersols 210 & 220 Elaine (Oleic Acid)
Emersols 211 & 221 Low Titre Elaines
Emery 621 & 622 Coconut Fatty Acids
Hyfacs 410 & 420 Hydrogenated Tallow F.A.
Hyfacs 430 & 431 Hydrogenated Fish Oil F.A.

*Descriptive literature—full specifications on request*

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from fire in the event of atomic warfare, according to Professor Church. The Columbia studies will lead to new and more effective methods of flameproofing clothing for military purposes, it is hoped, and the general public will also benefit.

**Lancashire Workers to Visit U. S.** LONDON (*McGraw-Hill*)—There is a possibility of exchange visits taking place between American and British cotton operatives. The primary object would be the study of textile techniques in American mills under the auspices of the Anglo-American Council on Productivity.

**For Textile Export Development.** Four major associations within the cotton-textile industry have banded together to protect and develop the industry's export trade and to combat unfair restrictions on American textiles in overseas markets. The groups are the American Cotton Manufacturers Association, Association of Cotton Textile Merchants of New York, The Cotton-Textile Institute, and Textile Export Association of the United States. A joint committee consisting of representatives of these associations, to be known as "The Textile Industry Committee on Foreign Trade," has been formed. The committee comprises: ACMA—Thomas B. Estes, J. P. Stevens & Co., and Joseph W. Barnett, Cannon Mills; ACTM—Alonzo F. Bonsal, Joshua L. Baily & Co., and John C. Hughes, McCampbell & Co.; CTI—Floyd W. Jefferson, Iselin-Jefferson Co., and John M. Hughlett, Dan River Mills; TEA—William C. Planz, Neuss, Hesslein & Co., and N. S. W. Vanderhoef, Turner Halsey Export Corp. Mr. Planz is chairman. John W. Murray was named secretary.

**Suggests Postage Stamp.** Issuance by the Post Office Department of a special commemorative stamp in honor of 160 years of cotton-textile manufacturing in the United States has been proposed to department officials, and is also the subject of a bill introduced in the House of Representatives by Minority Leader Joseph W. Martin, Jr. (Mass.) The Association of Cotton Textile Merchants of New York and other groups are behind the proposal. The proposed design shows the old Slater Mill at Pawtucket, R. I., the establishment of which marked the change in this country from a purely agricultural to an industrial economy.

**"Fashion Accents Crisp."** A large style show was staged in the grand ballroom of the Waldorf-Astoria, New York, Feb. 2 to celebrate the advent of starched effects in women's cotton styles. The theme was "Fashion Accents Crisp," and the sponsor was Corn Products Refining Co., makers of Linit starch. In this and other promotional channels that company is giving prominence to the "Crisp Look" as successor to the "new look."

**Air Conditioning in Russia.** Moscow (*McGraw-Hill*)—Air conditioning apparatus for removal of excess moisture is to be installed in all textile mills of Soviet Georgia, according to a recent decision of the Georgian Ministry of the Textile Industry. The apparatus to be used was claimed developed by the Tbilisi research institute of labor protection. Another product of Soviet textile research is termed "capron threads" made from products of coal distillation. The new "capron" thread is described as 3½ times stronger than any other material used in making fish nets for which it is highly recommended.

**Nylon Motion Picture.** "This Is Nylon" is a 29-min. motion picture in color which combines a chemist's version of the nylon story told in nontechnical language and his wife's report of a fashion show where nylon holds the center of the stage. It was produced in Hollywood for the Nylon Div. of E. I. du Pont de Nemours & Co. and is designed primarily for educational purposes.

**Vinyon in New Carpet.** The vinyl-resin plastic used in the new "carved" broadloom carpet currently offered by Firth Carpet Co. is Vinyon HH resin staple. The Vinyon staple is credited with giving the carpeting an embossed or hand-carved effect which is both more permanent and more pronounced than previous methods. The carpeting will retail around $11 to $12 a square yard.

**New Bonded Web.** Wellington Sears Co., of New York, selling agents for West Point Mfg. Co., West Point, Ga., has added a new department to handle the sales and engineering of "Lantuck," a new type bonded fabric.

**Cotton Council at Los Angeles.** Cotton's progress during the past decade will serve as the general theme of the National Cotton Council's eleventh annual meeting in Los Angeles, Calif., Mar. 7 to 9.

# HOW A KNITTING MACHINE Like EDMOS can Widen YOUR MARGIN of PROFIT

What's happening to the margin of knitting profits in today's market? As an expert in the field, you know how the "trade wind" is blowing. Your customers have become increasingly price-conscious, quality-conscious.

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# Important Questions..

## about iron and steel scrap for every top business man in every industry

**Q.** ***How* bad *is the shortage of scrap?***

**A.** Actually, we have enough scrap to get along, but too much of it is *light* scrap. What is badly needed today is more *heavy* scrap.

**Q.** ***Why more* heavy *scrap?***

**A.** Because heavy scrap will produce *more and better* steel in *less* time.

**Q.** ***Why is the heavy scrap shortage so* harmful *to our economy?***

**A.** Half of all the ingredients that are melted to make steel and castings consists of scrap iron and steel. The short supply of heavy scrap during the past year limited the production of steel mills and foundries. At the present record rate of production, there is still not nearly enough steel to meet the current and anticipated demands of our domestic economy, military requirements, and ERP. More heavy scrap will help bridge the gap.

**Q.** ***What's being* done *about it?***

**A.** A drive . . . and everybody is cooperating . . . is being started for industrial scrap, to (1) help step up present steel production, and (2) *create a visible reserve of heavy scrap in the event of national emergency.*

**Q.** **Why *is there a shortage of heavy scrap?***

**A.** Several reasons:

1. Very little of the 123,000,000 tons of steel and steel products exported during the war has come back as scrap.
2. With replacements scarce and expensive, much old equipment which would normally have been junked by now, is still in use.
3. A halt has been called on the junking of old vessels and military equipment which has until recently been a source of scrap.
4. The amount of heavy scrap produced in fabrication —the left-overs of machinery, etc.—is not enough to meet the demand for new steel and castings.

**Q.** ***How about the heavy scrap that must exist in huge quantities in* Germany *and* Japan?**

**A.** Some of this will be coming through, but not in good quantities until preparation and transportation facilities within those countries improve.

**Q.** ***Where can* additional *scrap be obtained from domestic sources?***

**A.** From industrial plants which have on hand large amounts of heavy scrap in the form of obsolete machinery, idle equipment—tools, dies, jigs, fixtures, etc.—and unnecessarily large repair parts inventories. Such scrap is the best possible type for the manufacture of quality steel.

**Q.** ***Isn't such material* ordinarily *turned in as scrap?***

**A.** Experience shows that plant "housekeeping" is not particularly good when plant production is high. People are too busy. However, if executives realized the critical situation, they would order the necessary steps to be taken.

**Q.** ***How can I help in this drive?***

**A.** Appoint one top official in your plant as a Salvage Director —with full authority to give orders and throw out everything that is not going to be needed. Have him consult with your trade association's Steel Scrap Drive Committee. Call in your local scrap dealer. (Incidentally, the prices paid for scrap are the highest ever.) Promote your scrap drive by meetings of department heads and through plant bulletin boards and newspapers.

**Q.** ***How do I benefit from moving scrap in addition to the money received for it?***

**A.** 1. You get the use of much-needed and expensive floor space now occupied by such equipment and material.
2. You eliminate the cost of keeping records and inventory.

**Q.** ***When does the scrap drive* start?**

**A.** Right this minute. The very next thing to do after reading this page, should be to start *your* plant's scrap drive!

**Q.** ***What is the goal of this drive?***

**A.** One million tons of *heavy* scrap . . . and "housecleaning" in your plant will help.

PUBLIC SERVICE PROJECT · THE ADVERTISING COUNCIL

**SCRAPPY SAYS:**

***Search your plant for HEAVY SCRAP ...Help make MORE STEEL!***

TEXTILE WORLD

# KILL STATIC with Complete Safety

STATIC in textile mill routine is a costly nuisance. To maintain trouble-free and smooth speed production, static must be eliminated continuously and safely. Since 1904, thousands of mills the world over have been eliminating static with CHAPMAN equipment — efficiently, with complete safety, and at low cost

Obviously, there can be no "package" solution for static problems. CHAPMAN Static Eliminators are of several types, each of which is specifically designed to do its one job, and to do that job superlatively well — to KILL STATIC — whether at a single point or arross any width of web.

## THE CHAPMAN STATIC ELIMINATOR

**INSTANTANEOUS ACTION — TROUBLE-FREE**

Textile mills everywhere report to us that CHAPMAN Static Eliminators are speeding their production by eliminating static at the point where static causes trouble; on the condensers of wool carding sets; over doffer combs; on Peralta machines, nappers, dryers; in the drawing process of making worsted type yarns on the American or modified cotton system; on cotton type drawing frames handling cotton or wool and the various synthetics, either alone or in blended combinations; in high speed warping and slashing, and many other operations.

## Proven Safety & Efficiency

CHAPMAN Static Eliminators are absolutely safe. Over 40 years of *actual, continual use under varying conditions* have proven this. No shielding or any precaution is needed to protect operators. Neither operators, State or other governments object to its use. CHAPMAN Static Eliminators are silent and instantaneous in action; reduce the need for excessive humidity; require a minimum of maintenance. Operating cost is so low as to be negligible.

CHAPMAN STATIC ELIMINATORS ARE TESTED AND APPROVED BY THE UNDERWRITERS' LABORATORIES.

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**ESTABLISHED 1904**

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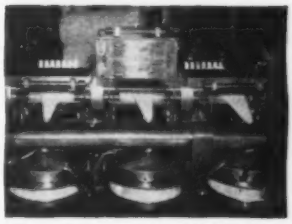
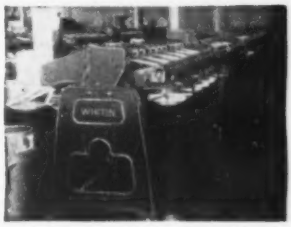


Three slivers in a line of drawing — equipped with CHAPMAN Neutralizers. One clearer cover is raised.



Two lines of drawing, running blends containing wool, acetate rayon, etc. Equipped with CHAPMAN Neutralizers, insuring full production.

Line of Tape Condensers in a woolen mill, all equipped with CHAPMAN Neutralizers of the individual type.

A close-up view of a cotton card fitted with a CHAPMAN Neutralizer.

## NEWS ABOUT Suppliers

**Draper Corp.**, Hopedale, Mass., has appointed Gordon R. Moffatt as superintendent of its East Spartanburg, S. C., plant to succeed the late Kenneth F. Jackson. Mr. Moffatt has been assistant superintendent for the last four years.

**Oscar Kohorn & Co.**, New York, N. Y.—L. T. Edwards, formerly managing director of Oscar Kohorn & Co., Ltd., London, is visiting the company's main office in New York en route to Brazil. He has been appointed chief engineer of the staff of Kohorn technicians who are now operating the large viscose rayon plant built by Kohorn for Companhia Nitro Quimica Brasileira at Sao Paulo.

**WAK Industries**, Charlotte, N. C.—W. A. Kennedy, president of that firm, has recently been elected president of the Charlotte Engineers Club.

**Charles F. Bacon**, 346 East 49th St., New York, N. Y., has established a brokerage business in textile designs. He offers a diversified collection of designs which is constantly changing since he returns to the artist any designs which remain unsold after six months.

**J. W. Davis**, 122 Dillingham St., Columbus, Ga., has opened a new mill-supply business specializing on spools, bobbins, belting, loom parts, card clothing, mill boxes, etc. He has been appointed agent for Alabama, Georgia, Tennessee, Mississippi, and Louisiana, by Fisher Mfg. Co., Hartwell, Ga., maker of roving trucks, doff boxes, filling cans, etc.

**Textile Equipment Corp.**, Greenville, S. C., has been incorporated for $100,000 with the following officers: W. D. Dodenhoff, president; George Hufferd, vice president; H. C. Hard, secretary-treasurer.

**Phoenix Chemical Co.**, August, Ga., is newly established to manufacture detergents, adhesives, resins, dyestuffs, and dispersing agents for the textile industry. Heading up the new organization are W. L. McCrary, president; O. O. McGahee, vice president; Laurie E. Whittelsey, general manager; and W. Paul Bowen, director of research.

**Edward Parkinson Mfg. Co.**, Providence, R. I., will move to a unit of the old Esmond Mill, Esmond, R. I., following the purchase of that bulding by Edward P. Clark, owner of the firm.

**William Whitman Co., Inc.**, New York, has established Whitman Plastics, Inc., a sub-

*SUPREME KNITTING MACHINE CO., INC., Brooklyn, N. Y., has appointed Sidney Mishcon (left) as secretary and general manager, and Irving M. Golden (right) as general sales representative. Mr. Mishcon, who has been associated with the company for many years, will also assume charge of domestic and foreign sales. Mr. Golden was formerly president of Golden Mfg. Co., Chicago. He has had over 30 years experience in knitting, both in this country and abroad.*

## MILES OF CLOTHING INSPECTED BY THE INCH

Wissco's beginning-to-end control of manufacture assures perfect card clothing—the kind of clothing you need to get smooth, uniform carding and high production. We make our own steel and draw our own card wire. The staples are precision set and ground for keen penetration. Finally, experienced inspectors examine every inch of the material to make certain that it is in perfect condition.

Wissco Card and Napper Clothing is available in all standard settings and foundations. Hardened Point Clothing affords increased production and cuts costs by eliminating loss of time due to regrinding. Write for detailed information.

**WISSCO HAND STRIPPING CARD**

The finest card you've ever used. And when worn it may be returned to us for complete reconditioning and refacing at about half the cost of a new card. Send for description and price list.

*Also available—English Picker Cloth*

*Wissco*

**CARD AND NAPPER CLOTHING**

for wool, worsted, asbestos and specialties

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**District Offices**—Boston, Buffalo, Chicago, Denver, New York
**Pacific Coast**—The California Wire Cloth Corporation, Oakland 6, Cal.

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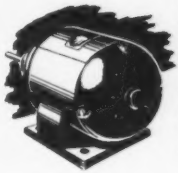

**REBUILDING ELECTRIC MOTORS** . . . Take a big headache out of that job by using Oakite materials for cleaning before rebuilding or repairing motors. Powerful Oakite detergents soften up insulated tape for easy removal without scraping. Job-proved Oakite cleaning set-up, yours on request.

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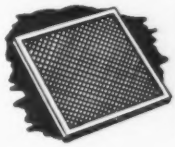

**DESLIMING HUMIDIFIERS** . . . Here's a maintenance job simplified with Oakite cleaning that saves costly troubles: Before replacing screens in humidifier tanks, soak them in a hot solution of recommended Oakite slime-remover. It cuts through slime and dirt without harming underlying metal. More details yours for the asking.

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HIGH SPEED TRICOT

MACHINE

Many Aveco High Speed Tricot Machines have been installed in mills throughout the world during the past three years. Aveco Machines have been setting a new high standard for performance and for low-cost fabric construction.

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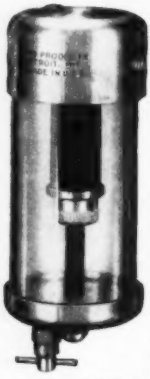
WATER, DIRT or SLUDGE IN YOUR AIR-LINES?

This New M-B AUTOMATIC AIR-LINE FILTER



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is equipped with RIBBON TYPE FILTERING ELEMENT . . . Removes solids 10 microns (.00039) and larger. It is a radical departure from general practice, bowl being transparent plastic. Consequently all foreign matter filtered from the air-line is clearly visible, eliminating guess work as to when filtering element should be cleaned or bowl drained . . . There is NO WATER, DIRT OR OIL in compressed air that has passed through this filter . . . This piece of equipment gives maximum protection to air-operated controls on Slashers and Humidifiers, also Blow-off of the Knotting Device on Barber-Coleman Spoolers, also Abbott Winders and Blow-off hoses in Weaving and Spinning Rooms . . . This new Filter affords our "Amoskeag" Pneumatic ROLL PICKER, Model A.V.T., or similarly operated equipment, maximum protection.

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## NEWS ABOUT SUPPLIERS (Continued)

sidiary, with a plant at Lynn, Mass., which is now in production. The products will be sold through the Whitman company as selling agents. Current production is principally vinyl plastic film in a wide range of color. Extruded vinyl products for industrial applications are being produced to manufacturers' specifications. Ralph A. Nelson has been appointed sales manager of plastics division.

**H & B American Machine Co.**, Providence, R. I., has elected W. A. Sipprell, Jr., as president, succeeding L. C. Edgar, Jr., resigned. Mr. Sipprell has been chairman of the board, which office he retains.

**Freydberg Bros.-Strauss, Inc.**, New York, N. Y., has been named exclusive U. S. distributor for the yarns developed by Anny Blatt, French designer.

**Tennessee Eastman Corp.**, New York, N. Y., has appointed Duncan G. Carmichael as technical representative for Eastman acetate dyestuffs, with headquarters at the plant in Kingsport, Tenn. The new position is designed as a liaison between Tennessee Eastman's dye customers and its sales and production staffs.

**Cravenette Co., U. S. A.**, Hoboken, N. J., has appointed Moreland Chemical Co., Spartanburg, S. C., to sell its water-repelling preparations to finishing plants and mills located in North Carolina, South Carolina, Tennessee, and Georgia.

**E. I. du Pont de Nemours & Co.**, Wilmington, Del.—Dr. Elvin H. Killheffer, of Du Pont's Development Department, retired Feb. 1 after 29 years service. He has had life-long association with the dyestuff industry and was one of the leaders in the development of that industry in the United States during and subsequent to World War I. He is president of the Synthetic Organic Chemical Manufacturers' Association and one of the organizers and a past president of American Association of Textile Chemists & Colorists and the Textile Research Institute. He joined Kalle & Co. in 1904. He was later president of Newport Chemical Works which was acquired by Du Pont. Howard J. White, one of the nation's authorities on synthetic fibers, also retired Feb. 1 after nearly 34 years with Du Pont. He has

***SWIFT & CO., OIL PLANT IN OPERATION—W. E. Oyler (left), manager of the Lever Brothers Co. plant in Hammond, Ind., receives from E. A. Moss, vice president of Swift & Co., transmittal papers on the first tank-car shipment of industrial oil from Swift's new technical products plant, also in Hammond. This shipment was a tank of decolorized oil for manufacture of soap.***

lately been an assistant manager of the Rayon Dept. Recent changes in Du Pont's Nylon Div. include transfer of A. J. Smith, Jr., New York, district sales manager, to the new nylon yarn plant at Chattanooga, Tenn.; promotion of Charles E. du Pont, assistant district sales manager, to sales manager at New York; promotion of Alexander D. Irving, II, a salesman, to succeed Mr. du Pont.

**American Boconize Corp.**, New York, has formed to market "Boconize", the new mothproofer, through retail outlets including drug, grocery, department, and variety stores for home use. It will retail at $2 per quart. Alnav Trading Corp., New York, N. Y., the export division of Bocon Chemical Corp., has established an agency for the sale of Boconize in Oslo, Norway, with the firm of Fredrik Thrane. Previously distribu-

***THE CHARLOTTE SALES EXECUTIVES CLUB, Charlotte, N. C., will be host April 22 to the Piedmont Sales Conference. The theme of the meeting will be "New Horizons for Selling" and attendance of more than 500 top executives of the Carolinas is expected. General chairman is Robt F. Guthrie, district manager for G. H. Tennant Co. There will be speakers of prominence.***

# *Cut your knitting cost on*

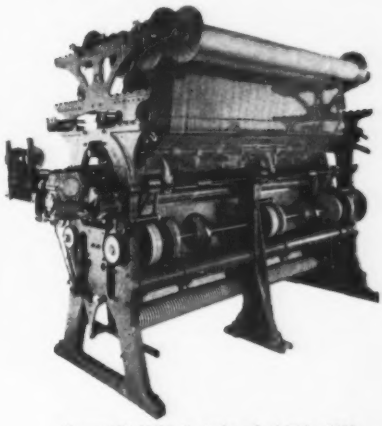
# POLO SHIRT FABRIC

The *Kidde* Knitter will produce *more than double* the poundage of polo shirt fabrics, in comparison with prewar Raschel machines. The Chopper Bar on the *Kidde* Knitter operates smoothly, quietly and precisely. With the Chopper, mills are maintaining speeds up to 150 to 170 courses per minute. Without the Chopper Bar, mills are running up to 240 courses and producing 28 to 30 lbs. an hour.

That's typical of the new high production speeds obtained with the *Kidde* Knitter. A new drum drive and needle bar motion make these speeds possible—and the machine is designed throughout to withstand them.

## Cut knitting cost on these fabrics too with a *Kidde* Knitter

ELASTIC FABRICS for corsets, girdles and brassieres. DRESS FABRICS. NETTINGS and VEILINGS. DISHCLOTH MATERIAL. LAUNDRY NETS. CURTAIN FABRICS. NARROW FABRICS. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters as well as for polo shirts.



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**Kidde Knitter**

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**PLATES**—Sizes from 4" to 40". Single or Triple gap.
**PULLEYS**—Sizes from 12" to 30" dia. Belt widths 4" to 60".
**DRUMS**—Sizes from 12" to 30" dia. Face widths 4" to 60".
**LIQUID TRAPS**—Pipe sizes to 10" dia.
**PNEUMATIC HUMPS**—To fit pipe diameters 3" to 20".
**UNITS (PORTABLE)**—Sizes from 12" to 30" dia. Belt widths 4" to 60". Lengths to specifications.

**Homer... "TOPS" IN MAGNETIC PROTECTION AGAINST...**

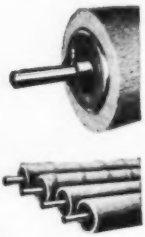
**TRAMP METAL**

**HOMER Permanent "non-electric" Magnetic Separators have won for themselves an enviable reputation in many leading industries as "TOPS" for removing TRAMP METAL from materials being processed. Write for Bulletins.**

**The HOMER MANUFACTURING CO., Inc.**
**DEPT. T-24** **LIMA, OHIO**

**Producers of Magnetic Separator Equipment Since 1923**

**MANY INDUSTRIAL ROLL PROBLEMS are solved by using**



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Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

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*Industrial Roll Division*
**RODNEY HUNT MACHINE CO.**
**66 Maple Street, Orange, Mass.**

*Reg. U.S. Pat. Off.


## NEWS ABOUT *Suppliers* (Continued)

tors had been appointed in Italy and at Melbourne, Australia.

**Calco Chemical Div.,** American Cyanamid Co., Bound Brook, N. J., has appointed James Dixon as manager of dyestuff department of the company's Philadelphia branch. He has been with Calco since 1920. His office is in Terminal Warehouse Bldg., 401 N. Broad St., Philadelphia, Pa. L. L. Hedgepeth, formerly executive secretary of the Virginia State Water Control Board, has joined the American Cyanamid Co. as consulting engineer on industrial effluent problems and will make his headquarters at the Bound Brook, N. J. plant of the company's Calco Chemical Div.

**L. Sonneborn Sons, Inc.,** Textile Chemicals Div., New York, has named Joseph G. Donharl as sales representative in Georgia, Tennessee, Alabama, and Mississippi. He has had broad experience in textile processing and finishing and was formerly with American Cyanamid Co. and Rohm & Haas Co.

**Monsanto Chemical Co.,** Plastics Div., Springfield, Mass., has decided to name all of its polystyrene products by the single label, "Lustrex". Classification for specific uses and formulations will be indicated by letters following the name.

**Foxboro Co.,** Foxboro, Mass., has opened a new branch office at 123 W. College Ave., Appleton, Wis. The manager is Milton A. Schreiner. Another new Foxboro office is at 6225 Brookside Ave., Kansas City, Mo., where George J. Willier is manager.

**Synthron, Inc.,** Ashton, R. I., has installed a new stainless-steel resin-production unit at its plant in Ashton, R. I., which will increase its production capacity of urea-formaldehyde resins by more than 5,000,000 lb. per year. Synthrez D (monomeric methylolurea compound) is used for crushproofing and shrinkage control in the textile industry.

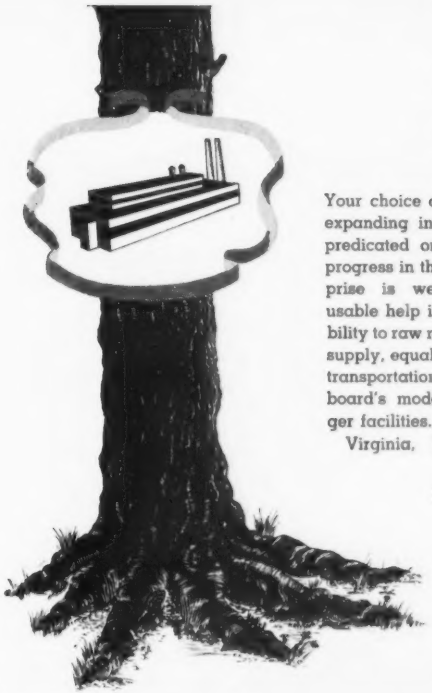
**Industrial Cooling & Moistening Co.** has changed its corporate name to White & Co., Inc., Charlotte, N. C. The company was organized in 1932 to provide air conditioning for the textile industry. The same officers and personnel will continue to operate the business. Geo. A. White is president; W. W. Hewitt, vice president; and B. S. Powell, secretary.

***BENJAMIN R. EBERSMAN** has resigned as general manager of Supreme Knitting Machine Co., Brooklyn, N. Y. Mr. Ebersman's business career has been spent entirely with Supreme, where he is now ending 16 years' service. During his association with Supreme he effectively established, developed, and directed world-wide sales representation. His domestic experience has been concurrent with export as the company grew and expanded. Under his guidance, Supreme was one of the few companies which, during the war, won the Army-Navy "E" award five times. Mr. Ebersman's future plans have not yet been announced.*

**Pennsylvania Salt Mfg. Co.,** Philadelphia, has opened a new district sales office in Appleton, Wis., for its Heavy Chemicals Div. C. H. Anderson, of Pennsalt's Chicago office, has been placed in charge as district sales manager.

**The B. F. Goodrich Co.,** Akron, Ohio, has renamed its Industrial Products Sales Div. as Industrial & General Products Div., since it now includes plastic products sales and production departments.

**Brown Instrument Co.** — L. F. Lawrence has been promoted to branch manager of the Charlotte, N. C., office of the Minneapolis-Honeywell Regulator Co., and its industrial division, Brown Instrument Co. O. B. Wilson, eastern regional sales manager for Brown Instrument, has been named manager of sales for the



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## for your industry—
## in the SOUTHEAST

Your choice of location for a new or expanding industry is sound if it is predicated on joining the march of progress in the Southeast. Here, enterprise is welcomed with practical usable help in such ways as accessibility to raw materials, adequate labor supply, equable climate, and splendid transportation as typified by Seaboard's modern freight and passenger facilities.

Virginia, North Carolina, South Carolina, Alabama, Georgia and Florida—these are promising grounds in which the roots of your industry can flourish. Investigate the advantages of working—and living—as a neighbor in this friendly, forward-looking area. Along Seaboards rails are desirable plant sites, one of which may well answer your every requirement. A brief outline of your plans will bring factual information in the form of an *individualized* survey. Please address:

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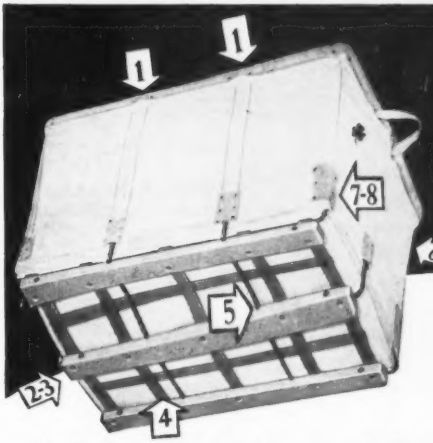
THROUGH THE HEART OF THE SOUTH

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with any other basket, and you'll use

# SHAMROCK
CANVAS BASKETS, HAMPERS, TRUCKS

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**ALL THESE FEATURES**

1. Spring steel used in frame is actually 25% higher tensile strength. 2. Full 2" x 1" wood runners. 3. Runners cross-riveted at ends to prevent splitting. (No. 12, 14, 15 and 21 styles.) 4. Rust-proof steel bottom. 5. All runners cross-grooved. 6. Extra heavy duck. Meets government specifications; actually 20% stronger. 7. End of sewing seams brass riveted. 8. Leather reinforcements around top and ends of strips on all popular styles. (Casters on trucks of proper capacity to carry load and give mobility.)

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***Ask your jobber!*** **261 Mitchell St.**

# Time Tested

For 56 years Heineman has been a successful processor of silk, nylon and rayon yarns for the hosiery and knitting trades.

Time has tested our reputation for workmanship and reliability.

Heineman famous for quality since 1893

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# NEW TORNADO* HEAVY DUTY VACUUM CLEANER

## Built for Textile Mill Cleaning

The new TORNADO* Heavy Duty Vacuum Cleaner is designed and built to give textile men a big, extra powerful, large capacity portable cleaner that does the work of a built-in system. Completely removes dust and lint which discolor weaving. Has tremendous suction —self-cleaning filter—both wet and dry pick-up—and converts from suction to blowing by movement of a lever. 1-man or 2-man operation.

Proved in Textile Mill use to give quicker, more thorough cleaning, and yet save spoilage, power and labor costs.

**2 H. P. to 10 H. P.**

**Scientifically designed textile attachments**

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**BREUER ELECTRIC MFG. CO.** 5124 Ravenswood Ave. Chicago 40, Illinois

* Trade Mark Reg. U.S. Pat. Off.


## NEWS ABOUT *Suppliers* (Continued)

***ROBERT GAIR CO., INC., New York, recently demonstrated a new printing process for paperboard at a meeting attended by company salesmen at the Piermont, N. Y., plant. Folding cartons for the packaging field are being printed on new press shown above by a process which until now has been limited to fine-art types of reproduction. H. T. Sorenson, Gair's technical advisor, is explaining the sheet-fed gravure printing which is being done on paperboard for the first time in this country.***

cast, southeast, and central regions extending from Florida and the Gulf of Mexico to the Canadian border. He will make his headquarters at the Brown plant in Philadelphia. Warren W. Matlack has been named industrial manager of Brown's New York branch, succeeding O. B. Wilson. Devon W. Fryback has been appointed district manager of the Albany, N. Y., office succeeding Matlack. D. Lyle Russell has been made industrial manager of the Hartford, Conn., district office, succeeding Mr. Fryback. Industrial-instrument maintenance and repair courses which have been conducted for the last 15 years by Brown Instrument are divided during the first six months this year into four classes of five weeks each from Feb. 21 through June 17.

**Hooker Electrochemical Co.**, Niagara Falls, N. Y., has appointed E. K. Newton as chief engineer to succeed T. L. B. Lyster, chief engineer from 1914 to 1917 and from 1937 through 1948, who has retired.

**Clinton Industries, Inc.**, Clinton, Iowa, has elected Carl Whiteman as a vice president. He joined Clinton Industries last year as general sales manager.

**Plastic Materials Manufacturers Association, Inc.**, Washington 5, D. C., has elected Dr. D. S. Frederick, vice president of Rohm & Haas Co., as president.

**General Electric Co.**, Schenectady, N. Y., has elected Ralph M. Darrin as a commercial vice president and assigned him customer-relations work in New England with headquarters in Boston. The Construction Materials Dept., at Bridgeport, has appointed Murray H. Owen as manager of sales.

**Pittsburgh Corning Corp.**, Pittsburgh, Pa., has moved its home offices from the Pittsburgh Plate Glass Bldg. to 307 Fourth Ave., Pittsburgh, where larger quarters are available.

**Koppers Co. Inc.**, Pittsburgh, Pa., has appointed R. R. Holmes as assistant general manager of its Tar Products Div. He was previously sales manager of that division. J. C. Macon, Jr., assistant sales manager of the Koppers' Tar Products Div., has been named its sales manager.

**Pittsburgh Plate Glass Co.**, Columbia Chemical Div., Pittsburgh, Pa., has appointed Brooks M. Dyer as St. Louis district sales manager, succeeding Vernon L. Clark, who has been assigned to special sales duties.

**Oakite Products, Inc.**, New York, pioneers in the field of industrial-cleaning materials and methods, marked in February the completion of its 40th year.

**Westinghouse Electric Corp.**, Pittsburgh, Pa., has appointed J. C. Fink as manager of its industry engineering department. F. R. Benedict has been named manager of the headquarters engineering departments.

**E. F. Drew & Co.**, New York, N. Y., has appointed George H. Kent as director of sales.

# CUT OPERATING COSTS!
## ASSURE CONTINUOUS PRODUCTION!
### with MOUNT HOPE CLOTH OPENING EQUIPMENT

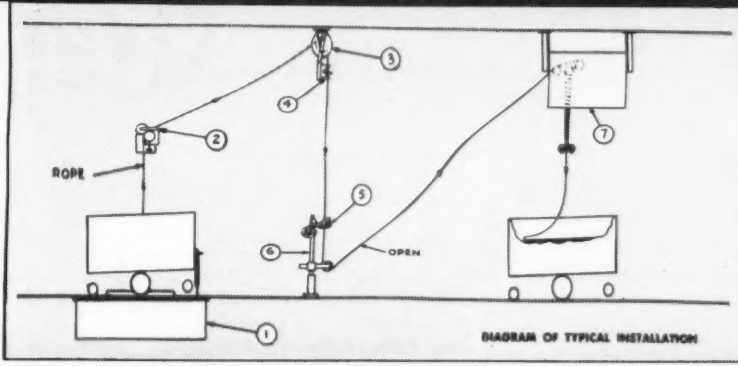


DIAGRAM OF TYPICAL INSTALLATION

1. Turntable Detwister
2. Tension Squeezer
3. Overhead Sheave
4. Detwister Switch
5. Swing Guider and Opener
6. Guider Stands
7. Plaiter

Draw Rolls
Stainless Steel Pot Eyes

***YOU GET INCREASED PRODUCTION with MOUNT HOPE INSTALLATIONS because:***

1. **MORE WORK HOURS** — no stopping of machines to remove twist.
2. **FULLY AUTOMATIC OPERATIONS** — no hand labor — opens cloth from the rope regardless of amount of twist.
3. **MAXIMUM FABRIC PROTECTION** — no sharp edges to cut cloth, cannot crease in next machine in line.
4. **MINIMUM MAINTENANCE** — no rapidly revolving parts.
5. **QUIET OPERATION** — no beating action.

For full information, including prices, write today for Bulletin SG-COL — no obligations, of course!

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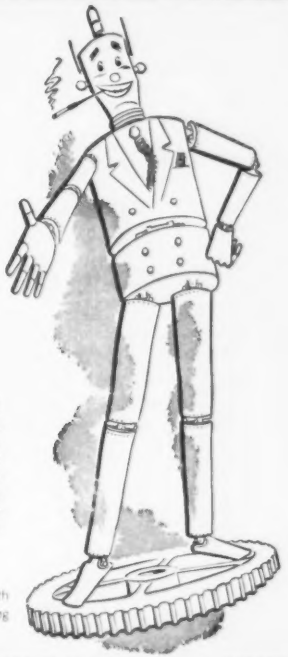
Representatives — Parkman Collins Company, Boston — for Maine • Ingalls Engineering Company, Providence — for N. H., Mass., R. I., and Conn. • John H. Andresen, Inc., Patterson — for Southern N. Y., N. J., and Pa. • Slaughter Machinery Company, Charlotte — for the South • S. S. Wilson, 1737 Howard St., Chicago — for Mid-West • Sidney Springer, Los Angeles — for California • W. J. Westaway, Ltd., Hamilton and Montreal — for Canada.



# meet the future
## AT THE
## 4th SOUTHERN MACHINERY and METALS EXPOSITION

**APRIL 25 - 28**

**MUNICIPAL AUDITORIUM • ATLANTA, GA.**



Bigger and better than ever—the greatest industrial show ever held in Dixie—the widest array of new equipment ever seen in the South, demonstrated by the Nation's leading manufacturers.

Here you will see the very latest developments for your industry—machinery and tools, products and processes—many shown for the first time—all designed to give you faster, better and more profitable plant operations.

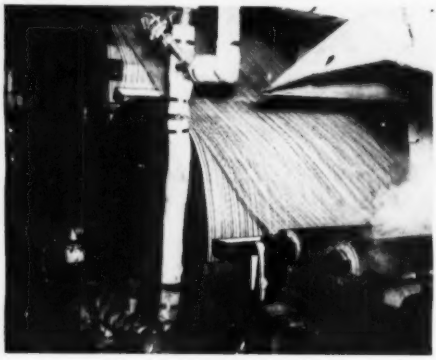
Modern engineering and science offer your business a bright new future. Meet your future at the Fourth Southern Machinery and Metals Exposition.

**In Conjuction with the SOUTHERN INDUSTRIAL CONFERENCE**

The Southern Industrial Conference on Machinery and Metals, jointly sponsored by Georgia Tech and Southern engineering societies, will be held at Georgia Tech in conjuction with the Exposition. The program, jam-packed with subjects of great interest to any manufacturer, will feature prominent speakers and national authorities.

**HOTEL RESERVATIONS** may be made direct with the hotel of your choice or through the Housing Bureau of the Exposition.

**SOUTHERN MACHINERY AND METALS EXPOSITION, INC. • 267 EAST PACES FERRY ROAD, N. E. • ATLANTA 5, GEORGIA**



**RED-RAY BURNERS**
INSTALLED ON
**COTTON SLASHER**
INCREASE PRODUCTION
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IMPROVE QUALITY
*Write for Bulletins*

**RED-RAY MANUFACTURING CO., Inc.**
455 West 45th Street • New York 19, N. Y.

*For Maintained Shrinkage—*
*Perfect Finish—Long Life*

**HUYCK**
**→COMPRESSIVE SHRINKAGE←**
**BLANKETS**

for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

***PALMER BLANKETS***—also available for your special requirements.

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KENWOOD MILLS
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# NEWS ABOUT *Mills*

## Cotton Mill News

**Abbeville Mills Corp.**, Abbeville, S. C., will construct 70,000-sq.-ft. addition to plant at cost of about $1,000,000.

**American Thread Co.**, New York, N. Y., has leased building to be erected at 6214 Cedar Springs Rd., Dallas, Tex., for new plant branch, storage, and distribution plant. Erection contract has already been let. Cost about $275,000, with equipment.

**American Yarn & Processing Co.**, Dixon Plant, Gastonia, N. C., has completed comprehensive survey of machinery and manufacturing conditions with aim of reducing manufacturing cost and improving yarn quality. Werner Textile Consultants and P.O.M. Co. have been in charge of work.

**Athens Mfg. Co.**, Athens, Ga., will convert 15,000 sq. ft. of floor space from manufacture of tire cord to rayon dress goods and sportswear. Company has ordered 208 Draper Model XD looms, and half of these are expected to be in operation by April 1. Evaporative-cooling and humidifying equipment and fluorescent lights are being installed.

**Bloom Mills, Inc.**, Gastonia, N. C., is adding 20,000 sq. ft. of space to its mill. Expansion will include installation of about 200 additional looms.

**Buck Creek Cotton Mills**, Siluria, Ala., has completed modernization and enlargement program, at cost of $1,500,000, which has materially increased efficiency and production. Addition of 15,000 sq. ft. of floor space has been built. In mill proper, new opening, picking, and blending machines of H & B American Machine Co. have been installed. New Barber-Colman high-speed spooling and warping machinery is in use, along with 500 new X Model looms from Draper Corp., and 10,000 new spindles from H & B. Mill is also having Atlanta Machine Works, Inc., change over 72 deliveries of Saco-Lowell drawing to five rolls eight ends up.

**Carolina Mills, Inc.**, Newton, N. C. and Maiden, N. C., has completed expansion program that cost approximately $250,000. Two buildings were added at former New City Mills plant in Newton.

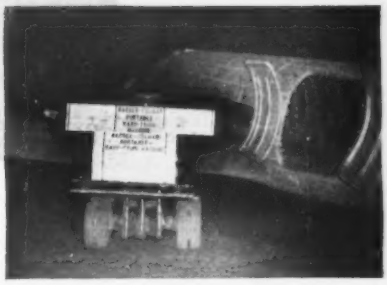
**Cheraw Cotton Mills, Inc.**, Cheraw, S. C., is completing $250,000 plant-modernization program, designed primarily to improve quality of carded knitting yarns manufactured by company. Program includes installation of three Saco-Lowell F-4 one-process pickers. New Saco-Lowell opening machinery has been installed throughout plant. In card room, some of old machinery has been moved and individual clutch drives have been installed on relocated roving frames. Twenty-three new cards have been installed by H & B American Machine Co., and new Abington vacuum stripping system has been installed to strip both old and new cards. Additional drawing frames have been installed.

**Columbus Mfg. Co.**, Columbus, Ga., subsidiary of West Point Mfg. Co., will diversify line of industrial fabrics now manufactured by adding sheet and pillow-case lines.

**Dallas Cotton Mills**, Dallas, Tex., owned by Horvath Mills, Inc., New York, N. Y., has been purchased by J. N. Fisher. Transaction included building only, as machinery had already been sold.

**Erwin Cotton Mills Co.**, No. 1 unit at Durham, N. C., has replaced much of its old opening equipment with new and modern machinery. Erwin plant No. 8, formerly Stonewall Cotton Mills, Stonewall, Miss., has placed contract for construction of new 7,000-bale cotton warehouse at plant. Building is one-story brick, plank roof on steel frame, divided by fire walls into six compartments of 5,000 sq. ft. each, with concrete floor and unloading platforms abutting railroad sidings on each side of

# MODERN TEXTILE MILL IN CENTRAL AMERICA VALUES BARBER-COLMAN WARP TYING MACHINE HIGHLY ENOUGH TO HAVE IT SHIPPED BY AIR . . .



BOXES HOLDING A BARBER-COLMAN MODEL LC PORTABLE WARP TYING MACHINE ARE TRUCKED UP READY FOR LOADING INTO THE AIRPLANE

**PRODUCTION SAVINGS WELL WORTH THE ADDED COST**

MODEL LC

**BARBER-COLMAN *Portable* WARP TYING MACHINE**

## MACHINE IS INSTALLED AND IN USE IN A FEW DAYS INSTEAD OF MANY WEEKS

Barber-Colman Portable Warp Tying Machines have proved their ability to pay for themselves quickly through savings over other methods of warp replenishment. In this particular instance, the purchaser of the machine saw enough savings in sight to justify having the machine shipped by air as soon as it was ready for delivery, thus gaining several weeks over shipment by ordinary methods. A Barber-Colman installer who was in the vicinity brought the machine to the mill the day after it was unloaded at the airport, with the result that it was in full use 2000 miles away only a few days after it left the plant at Rockford. The purchaser was Zimeri Hermanos, who operate an up-to-date and well-equipped mill, running a line of sheets and drills, near Guatemala City, Central America. The machine was a standard Model LC Barber-Colman Portable Warp Tying Machine.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

**BARBER-COLMAN COMPANY**

ROCKFORD • ILLINOIS • U. S. A.

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**BARNES SERVICE** *Consulting Engineers*
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Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.
★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods
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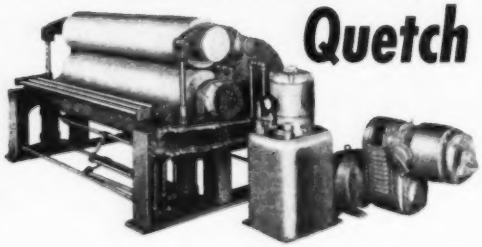
3. —Unfailingly put client's interest ahead of own
4. —Have personal qualities to work harmoniously with others, respect others' viewpoints, keep open mind and work patiently to find correct solutions and not rely on "snap judgment"
5. —Have moral courage to make true report following investigations even though by telling the truth a client may be lost.

**PARKINSON'S** *Quetch*



***Speeds Up To 150 Yards Per Minute!***

The Parkinson Quetch can be furnished with pneumatic or hydraulic controls to facilitate accurate roll pressures up to five tons.

This unit features stainless steel immersion tanks and tension rails, a fabricated steel frame with spherical roller bearings supporting the 12" diameter rubber covered rolls. Can be equipped with let-off and batcher drive. Rolls can be dismantled easily for resurfacing.

*Complete specifications and prices on request.*

**EDWARD PARKINSON Mfg. Co. Inc.**
**387 CHARLES STREET, PROVIDENCE 4, RHODE ISLAND**

## NEWS ABOUT *Mills*

warehouse. Building will be fully sprinklered, and construction contract has been placed with Fiske-Carter Construction Co., Spartanburg, S. C. Plans are also ready for enlargement and modernization of mill by 65,000 sq. ft. of new construction for improved efficiency and new machinery. Lockwood Greene Engineers, Inc., Spartanburg, S. C., office, is engineer.

**Dundee Mills**, Griffin, Ga., is constructing one-story brick and concrete building with 40,000 sq. ft. of floor space to house new dye plant for Lowell Bleachery South, a subsidiary. Dundee has just installed new high-speed, open-width bleaching range.

**Fulton Bag & Cotton Mills**, Atlanta, Ga., is constructing 41,000-sq.-ft. addition that is being erected with aid of prefabricated concrete panels that are tilted into place. Metal slot arrangement is attached to floor where outside wall will be, and these lock the panels when they are raised.

**Greenwood Mills**, Mathews Plant, Greenwood, S. C., has just completed addition to plant and finished construction of 90 brick houses for mill's employees.

**Monarch Mills**, Union, S. C., which has modernization program under way, has already installed much new equipment in card room and spinning department of Ottaray unit, and 81 XD looms are expected to be installed soon to replace last of old model looms.

**Monroe Textiles, Inc.**, Monroe, N. C., has been organized to operate cotton-yarn plant established by Bloom Mills interests in former Camp Sutton area. About 10,000 spindles will be put into operation shortly, and plans call for enlargement of mill to about 15,000 spindles at later date. New company has an authorized capital stock of $250,000.

**Ninety-Six Cotton Mill**, Ninety-Six, S. C., has completed 40 new dwellings for operatives. Mills are being air-conditioned.

**Plymouth Mfg. Co.**, McColl, S. C., has $1,000,000 modernization program nearing completion. Program has included general plant modernization, heavy machinery purchases, and large-scale installations of recreational and welfare facilities for operatives.

**Russell Mfg. Co.**, Alexander City, Ala., expects to complete modernization program shortly that has been in progress for last four years. Since end of war, more than $2,000,000 has been spent on new buildings and equipment.

**Standard - Coosa - Thatcher Co.**, plant at Piedmont, Ala., has completed installation of prism plate glass throughout plant at approximate cost of $50,000. New windows of brick-style plate are designed to distribute daylight evenly inside work rooms and to eliminate glare.

### Wool Mill News

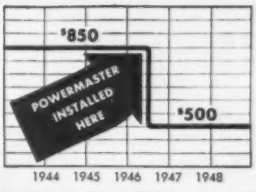
**Ace Woolen Co.**, formerly of Manchester, Conn., will locate main office at company plant in Bridgeton, Me. All equipment at Manchester plant will be transferred to recently acquired mill at Marble Falls, Tex., where carding and spinning operations are now being carried on.

**Bartram Mills, Inc.**, Philadelphia, Pa., new corporation, has purchased assets, including manufacturing facilities, of former Adelphia Worsted Mills, Inc. and will produce worsted gabardines for men's and women's wear. Officers and stockholders of corporation are Robert Lichtman, president; and Joseph Barlow, secretary-treasurer.

**Brinton-Peterborough Carpet Co. Ltd.**, Peterborough, Ont., has begun construction of new one-story additions to mill at Lindsay, Ont., for which contract recently was let to Eastwood Construction Co., Ltd., Lindsay. Cost reported over $240,000, with equipment.

**Cheyenne, Wyoming**—Milton Coffman, of Casper; Leonard Hay of Rock Springs; and R. J. Hofmann, of Cheyenne, have been named to committee to study possibility of locating and financing $2,000,000 wool scouring, combing, and spinning mill in Wyoming. Proposed plant would handle about 5,000,000 lb. of local wool and would employ between 400 and 500 workers. Products would be sold through sales organization of Redstone Textile Co., Inc., Unionville, Conn., which company would provide

# Powermaster Steam Generator Chops Steam Costs MORE THAN 40%!




MASTER Dyeing Company reduced their steam costs by $350 *per month* when they installed a 150 HP heavy oil-burning Powermaster at their model plant in Astoria, New York.

Before the steam generator was installed, the monthly steam bill ran about $850—now it amounts to about $500 for all expense.

Beside the money saved, the new Powermaster has made Master Dyeing Company's boiler room a *clean* and *comfortable* place. There are no ashes—no smoke—no wasted heat in the boiler room.

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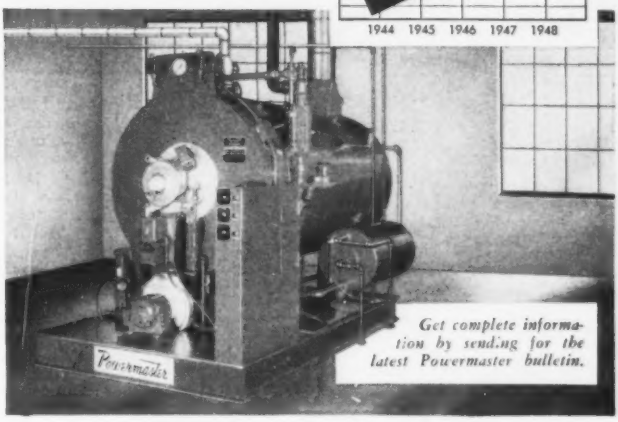


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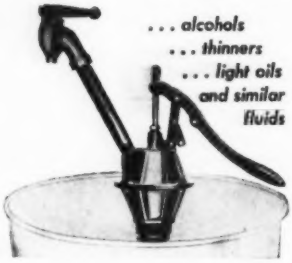

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## NEWS ABOUT *Mills* (Continued)

necessary machinery for plant. Col. Anderson, secretary of Wyoming Industry Commission; and Alex Johnson, University of Wyoming wool specialist, will assist committee.

**Felt & Textiles of Canada, Ltd.**, Victoria, B. C., subsidiary of Felt & Textiles of Australia, Pty., has started production in new $350,000 plant for manufacturing felt floor covering. Australian wool tops are dyed and blended to give marbled pattern, then pressed from foot-thick batts to less than one inch. Plant has crew of 30 and capacity of 1,400 sq. yd. per shift.

**International Worsted Mills, Ltd.**, headed by W. Gainsbury, president, has established plant in Montreal, Que., for production of fancy worsteds and gabardine fabrics. When in full operation, plant will have 24 Crompton & Knowles looms and all necessary auxiliary equipment. Employment will be given to 50 men and women. O. E. Bruck is manager; and A. A. Gallant, plant foreman.

**Lister Fabrics, Inc.**, Providence, R. I., has arranged for change of name to Melco Worsted Mills, Inc.

**Lincoln Spinning Mills**, Pawtucket, R. I., newly formed unit of Axelrod chain of mills, will start production of yarn within 60 days. Mill will be equipped with new type of French drawing and spinning machinery and will produce yarns for Airedale Worsted Co., Woonsocket, R. I., also unit of Axelrod chain. Mill will be housed in building constructed for Lincoln Spinning Co., owners, who never occupied it.

**Park & Barstow, Inc.**, Dexter, Me.—Paul C. Barstow has purchased interest of Gordon Park in company, and business now belongs to him.

**Pondicherry Mill**, Bridgeton, Me., has been sold by Sebago Woolen Mills, Inc., which had operated it since 1945, to Max Furman of Manchester, Conn.

**Renfrew Woolen Mills**, Arthur St., Renfrew, Ont., has started construction of new carding mill that will cost $150,000. Unit will measure 154 x 82 ft. and be of modern-type construction.

**Ramseur, N. C.**—J. J. Armfield, of Greensboro, N. C., has disclosed plans for worsted spinning mill to be built here by unidentified group of textile executives. S. E. Thogdon, of Asheboro, N. C., contractor, has been engaged for construction of initial unit, which will be one-story and contain about 30,000 sq. ft. of floor space.

**Stillwater Worsted Mills, Inc.**, Burrillville, R. I., has arranged for increase in capital to $3,250,000 for general expansion.

### Synthetic Mill News

**American Bemberg Corp.**, Elizabethton, Tenn., is awarding contract for structural-steel framing for new multi-story addition to mill, forming part of expansion and improvement program to cost over $2,000,000. Erection will begin soon.

**American Enka Corp.**, unit at Lowland, Tenn., has begun installation of 32 additional spinning machines. Completion of first unit of new plant is planned in first half of this year.

**Asheville Fabrics**, Asheville, N. C., is nearing completion on plant-addition and mill-modernization program. Mill is putting in Crompton & Knowles looms and is installing six 6-delivery drawing units that have been changed to five-roll drawing by Atlanta Machine Works, Inc.

**Burlington Mills Corp.** has let contract to Alley Construction Co., Bristol, Tenn., for construction of addition to mill in Bristol. New building to be used for expanded weaving operation and for increased warehouse space will be of brick construction, with maple and concrete floors. It will be 180 x 203 ft.

**Courtaulds (Canada), Ltd.**, has started operations at new viscose-rayon plant at Cornwall, Ont. When equipment is completely installed, production capacity will be 23,000,000 lb. annually, consisting of about 14,000,000 lb. of textile yarn and 9,000,000 lb. of tire yarn. Rayon-staple capacity will be 10,000,000 lb. per year. Plant is main feature of postwar expansion program that cost about $15,000,000.

**General Ribbon Mills, Inc.**, Catasauqua, Pa., subsidiary of Burlington Mills Corp., has changed names of mills at Catasauqua, Emmaus, and Allentown, Pa., to **Royal Swan,**

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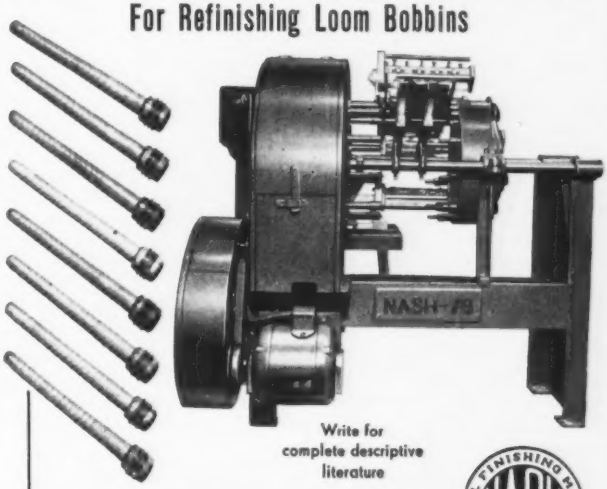


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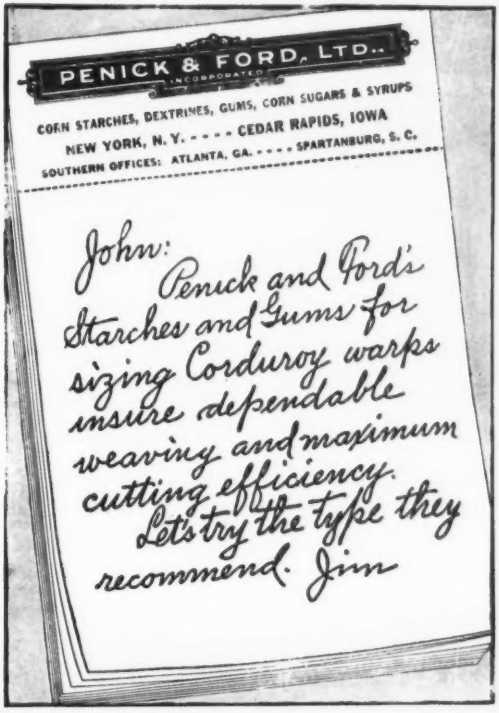
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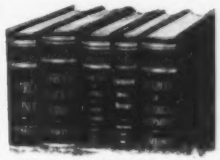

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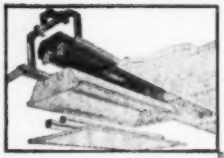

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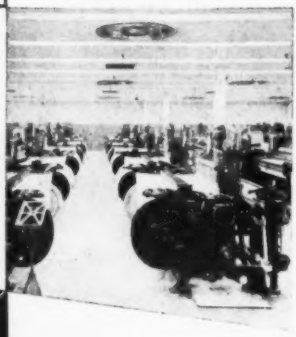

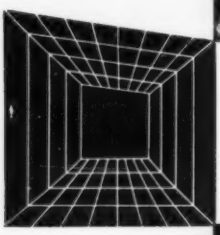

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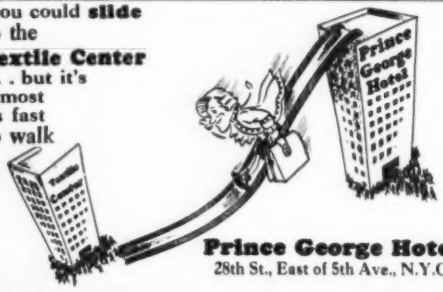


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## NEWS ABOUT *Mills*

Inc. New name now closely identifies mills with principal product, Royal Swan ribbon, which sells under that registered trade-mark.

**Golding Bros. Co., Inc.,** New York, N. Y., has purchased jacquard weaving mill in Paterson, N. J., for manufacture of drapery and upholstery fabrics. Plant will be known as **Golbro Mills, Inc.,** and will be managed by J. W. Barrett.

**Greenwood Mills,** Greenwood, S. C., has completed excavations and foundations have been laid for warehouse of new $3,000,000 rayon-filament weaving plant at Cochran's Station, near Greenwood. Greenwood Mills are being air-conditioned.

**Machias Mfg. Co.,** Machias, Me., will soon begin operations in new $1,000,000 rayon-weaving plant, which is first of its kind to be built in section. It will employ about 120 local workers. Payroll will be about $300,000 per year. Walter B. Gallant, of Newmarket, N. H., is president of Machias company.

**Raycotwool Mfg. Corp.** has filed charter with corporation department of Secretary of State's office in Dover, Del. Capital of firm was listed at $10,000,000. Corporation Trust Co., Wilmington, is serving as principal office.

**Verney Corp of New York** and **Verney Fabrics Corp.,** sales subsidiaries of **Verney Corp.,** have been merged into parent company effective Jan. 1.

### Knitting Mill News

**Barbet Mills, Inc.,** Lexington, N. C., has completed installation of latest type stainless-steel equipment from Gaston County Dyeing Co. Additional cloth-finishing equipment has also been installed. The $150,000 boiler plant is due for completion in near future. Mills are moving executive offices from Gastonia to Lexington because of continued expansion of operations.

**D. & S. Hosiery Mill,** Charlotte, N. C., manufacturer of men's and boy's half-hose, was damaged by fire recently.

**Germantown Hosiery Co., Inc.,** Philadelphia, Pa., has moved to new building at 301 Market St., from former location at 2408 Germantown Ave.

**Grey-Mist Hosiery Co.,** Owen Sount, Ont., is constructing new hosiery plant and plans to install latest full-fashioned machinery and equipment. Plans also call for addition of second story later on. M. G. Terney and H. G. Foster, both of Owen Sound, are proprietors.

**Koontz-Lynch Hosiery Mill,** Salisbury, N. C., is newly organized plant that is now producing about 50 doz. pr. of full-fashioned nylons weekly. They are 54-gage, 15 den.

**Orient Hosiery Ltd.,** Brockville, Ont., expects to have foundations laid in near future for new plant to be erected on 15-acre site. Project will involve expenditure of over $2,000,000 on buildings and equipment and is scheduled for completion by end of 1949. Building will be one-story and contain 60,000 sq. ft. of floor space. Plant will be subsidiary of Canadian Silk Products, Ltd., Sherbrooke.

**Pioneer Full Fashion Hosiery Mills, Inc.,** Salisbury, N. C., is newly organized concern for manufacture of hosiery under authorized capital stock of $100,000. Incorporators are Ervin Raver, Frederick Koontz, and Ney Lynch, Jr., all of Salisbury.

**Pons Full-Fashioned Mill, Inc.,** Morganton, N. C., has moved machinery from location near depot to brick, concrete, and steel building formerly occupied by Southern Hosiery Machine Works. Floor space is greatly increased, and production will be stepped up as result. Sixteen Wildman single-head knitting machines are in operation and one 32-section Kalio knitting machine is on order. Officers of concern are O. N. Pons, Sr., president; Mrs. Pons, vice-president; and O. N. Pons, Jr., general manager.

**Reidsville, N. C.**—J. B. Waynick and H. C. Atwater have leased building and plan to open hosiery mill here as soon as remodeling work is completed.

**Lee I. Robinson Hosiery Mills,** Philadelphia, Pa., has nearly completed $125,000 modernization program. Two-story Robinson building includes 17,550 sq. ft. on each floor.

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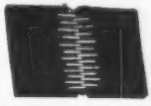

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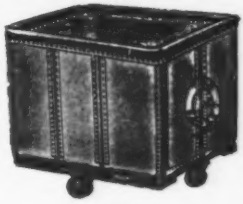

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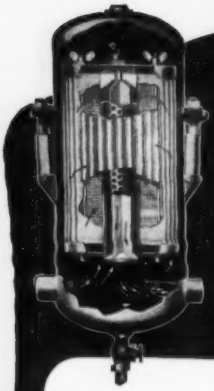

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## NEWS ABOUT *Mills*

**Silknit, Ltd.**, 590 King St. W., Toronto, Ont., is planning to erect addition to plant at Chesley, Ont., which organization now leases from that town.

**Vanette Hosiery Mills**, Dallas, Tex., is in midst of modernization program. Manufacturing buildings have been enlarged, and mill has been air-conditioned throughout with 260-ton Carrier unit. New finegage, high-speed knitting machines are being installed as rapidly as they are available.

**West Knitting Corp.**, Wadesboro, N. C., has installed new machines for lines of athletic shirts.

### Dyeing and Finishing Plant News

**Amtex Finishing Co.**, New York, N. Y., is successor to Prudential Dye Works, formerly located at Paterson, N. J. Operation, consisting of processing viscose, acetate, and cotton piece goods, is expected to start shortly. Officers are Americo Ventrell, president, and John Barone, secretary and treasurer.

**Aspinook Corp.**, Jewett City, Conn., **Lawrence Print Works, Inc.**, Lawrence, Mass., and **Arnold Print Works**, Adams, Mass., have been consolidated at special meeting of stockholders. Stockholders of Aspinook Corp. will exchange their shares on basis of four new shares for each share held.

**Holliston Mills**, Norwood, Mass., has purchased Brookfield Mills, East Brookfield, Mass., and unit will be called Holliston Mills, Brookfield Div. Brookfield plant contains 80,000 sq. ft. of manufacturing space, brick buildings, one four story and one two-story, with office building, power house, garage, and large lake. Thomas B. McCusker, treasurer of Holliston Mills, intends to put into Brookfield continuous dyeing machinery, as well as two new rotary-printing machines and necessary equipment for silg-screen printing. C. V. Austin, president of Brookfield, Mellen P. Cushman, New York, vice president, and Craig Davidson, of Brookfield's Chicago office, have resigned. Purchase of Brookfield gives Holliston four complete plants wholly owned and operated by Mr. McCusker.

**M. Salzberg & Sons, Inc.**, Central Falls, R. I., will lease about one-quarter of space of Esmond Mills, Esmond, R. I., and will move some of textile equipment to Esmond as part of expansion program. Initial operations will be started with about 250 workers, with production also continuing at Central Falls plant. Esmond Mills *was sold to Hobart Realty Co.*, Inc., Providence, by Smithfield Properties, Inc., corporation owned by Jacob Ziskind, that purchased entire mill property from Textron, Inc., last June. New owners will lease property to Salzberg organization.

### Miscellaneous Mill News

**International Ramie Co.**, San Francisco, has announced it will start construction this spring on a $2,000,000 cotton and ramie plant, the Clayton Textile Mills, on a 30-acre site at Fowler, Calif. W. E. Clayton, International Ramie president, said that the plant's 11,616 spindles and 185 looms will handle 36,000 lb. of California cotton, Acala 4-42, and 6,000 lb. of ramie a week. Initial employment should be about 110. The company plans to produce at the start 35,000 yd. of cotton broadcloth and light cloth, 17,500 yd. of dress goods, and 4,000 ramie bedsheets weekly. It is proposed to build the machinery on the Pacific coast, and it is said that India has already ordered 5,016 spindles from the company.

**Leedon Webbing Co.**, Pawtucket, R. I., has filed plans for one-story and basement mill building, 52x112 ft., for manufacture of webbing. S. Bizier, 11 High St., is architect. New mill, of steel and cinder-block construction, will be located on Coleman and Center Sts.

**Meredith Linen Mills**, Meredith, N. H., has been reopened for manufacture of kitchen towels and toweling. Plant is owned by Flax Processing & Linen Co. of Rhode Island. W. T. Rigby is resident manager.

**Reconstruction Finance Corp.**, on its bid of $100,000, has purchased extensive holdings of Florida Ramie Products Co., Canal Point, Fla. Sale had been ordered to satisfy mortgage judgment of $606,079. RFC was only bidder.

# TACKY?-

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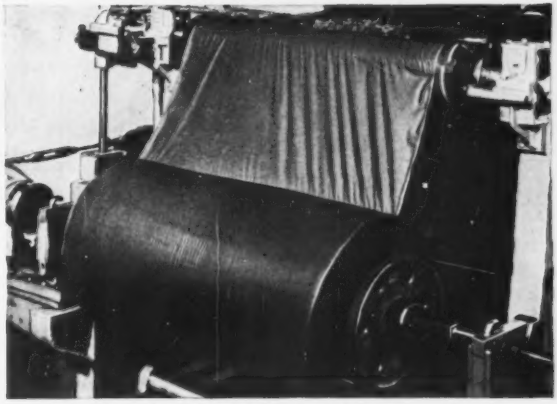
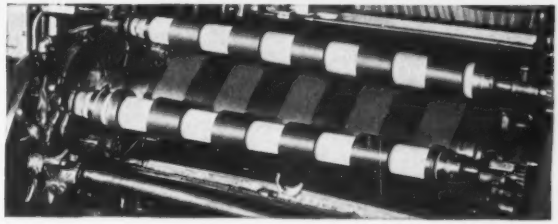


Below: using two rewind shafts for positive roll separation



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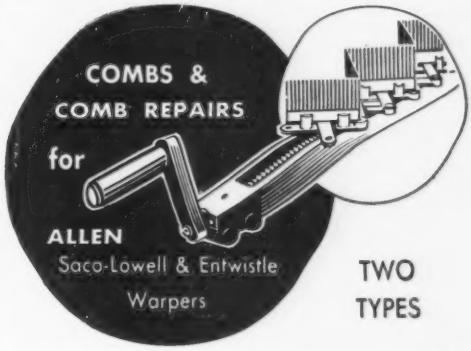


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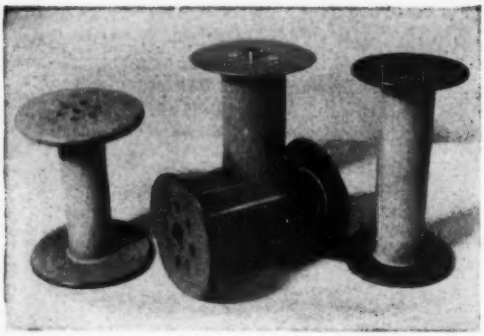

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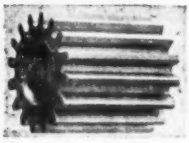

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# NEWS ABOUT *Men*

**Israel Rogosin** has been elected president of North American Rayon Corp. and American Bemberg Corp. Mr. Rogosin is president of Beaunit Mills, Inc., which purchased controlling interest in both companies last month. He succeeds **John E. Bassill** as president of both companies. New directors include five officials of Beaunit Mills: **I. Rogosin,** president; **E. Nufer,** vice president; **H. Rogosin,** vice president; **John N. Platoff,** counsel; and **William Ball,** a director and accountant. Sixth newly-elected board member is **Herbert Bayard Swope.**

**J. R. Brown,** executive vice president and one of founders of McGaugh Hosiery Mills, Dallas, Tex., has been named president to succeed **C. C. McGaugh,** who is retiring from business after being head of company since its organization 19 years ago.

**Henry L. Taylor** has become president of Esmond Mills, Ltd., Granby, Que., succeeding **Royal Little,** president of Textron, Inc. **Stephen C. Owen,** president of Beacon Mfg. Co., Swannanoa, N. C., has been named vice president. Interests of Beacon company recently purchased Esmond.

**David Jennings** has retired from J. P. Stevens & Co., New York, N. Y., after being identified with that company and southern textile industry for many years. He was at one time associated with Monaghan Mills, also Victor-Monaghan Mills. He was president and director of Aragon-Baldwin Cotton Mills, and served on the board of Victor-Monaghan Co.

**Gerald L. Bruck** has been elected president of Bruck Mills, Ltd., Montreal, Que. Formerly vice president, he succeeds his father, the late Isaac I. Bruck, founder of company.

**Henry Morgan,** president of Henry Morgan & Co., Ltd., department store, Montreal, has been elected to board of directors of Courtaulds (Canada), Ltd., Cornwall, Ont., and Montreal, Quebec.

**Robert Westaway** has been elected president of Oneida Bleachery, Inc., New York Mills, N. Y.

**Fred T. Small,** vice president of Celanese Corp. of America, has been elected member of board of directors of company to fill vacancy. He has been promoted from his post as manager of Cumberland, Md., yarn-producing plant to assume new executive duties in New York office. He will have direct responsibility for physical condition of company's operating plants, which number twelve in this country, three in Mexico, and one now under construction in British Columbia.

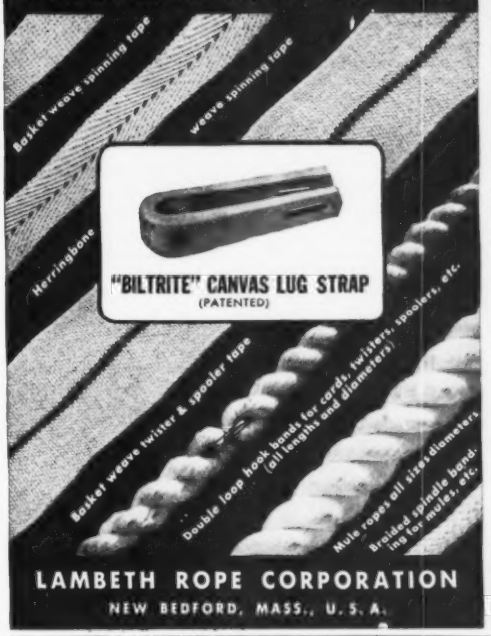
**K. H. Boydell,** vice president of Burlington Mills International Corp., has resigned. Company is subsidiary of Burlington Mills Corp., Greensboro, N. C., and embraces company's foreign operations. Mr. Boydell will become vice-president of Asheboro Weaving Co., Asheboro, N. C. **R. L. Poovey,** superintendent of Dominion Burlington Mills, Sherbrooke, Canada, is being transferred to executive offices at Greensboro to assume certain administrative responsibilities in Burlington International. **Marvin A. Law,** formerly superintendent at Burlington Mills Steel unit, near Rockingham, N. C., has been transferred to Burlington International, succeeding Mr. Poovey.

**W. Avery Neaves,** vice president and director of Chatham Mfg. Co., Elkin, N. C., will retire from service.

**John Leonard,** superintendent of printing, dyeing, and finishing at Cheney Bros., South Manchester, Conn., has been elected a director of company to replace the late Austin Cheney.

**Fred W. Noechel,** who recently resigned his connection with Botany Mills, Inc., Passaic, N. J., has become associated with the USEO Div. of Callaway Mills Co., La Grange,

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING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## NEWS ABOUT *Men* (Continued)

Ga. He had been associated with Botany for 22 years, and was recently elected first vice president of the American Association of Textile Technologists. He is now making his headquarters in La Grange, and will work especially in connection with Callaway's worsted products.

**Fred T. Small,** vice president of Celanese Corp. of America, New York, has been elected a member of the board of directors of the company to fill a vacancy. He has also been promoted from his post as manager of the Cumberland, Md., yarn plant to assume direct responsibility for the physical condition of all the company's operating plants, with his headquarters in New York.

**George S. Fabel** was elected president of the Asbestos Textile Institute at its annual meeting at New Brunswick, N. J., succeeding **George W. Marshall Jr.,** who has served in this capacity for the last two years. Mr. Fabel is president of the Southern Asbestos Co., of Charlotte, N. C. Other officers are: Vice President, **A. R. Byrnes,** Union Asbestos & Rubber Co.; treasurer, **William C. Scott,** Keasbey & Mattison Co.; secretary, **Myril C. Shaw,** Rutgers University.

**W. M. Berry** has been appointed secretary-manager of the Primary Textiles Institute, Toronto, Canada, and of its associated trade organizations, the Canadian Woolen & Knit Goods Manufacturers Association, the Cotton Institute of Canada, and the Silk & Rayon Institute. He succeeds the late Major Douglas Hallam in these offices. Since 1935 he has been assistant secretary of the Primary Textiles Institute and allied associations in charge of their offices in Montreal.

**Dr. Alfred T. Clifford,** senior chemist with Interchemical Corp., Textile Colors Div., Fair Lawn, N. J., since 1943, has joined the staff of Riegel Development Laboratories, Inc., at Ware Shoals, S. C.

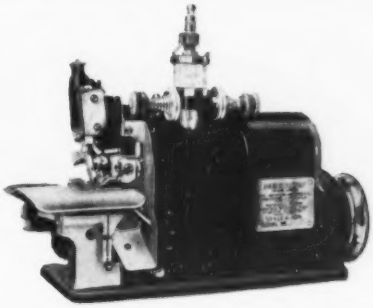
**Loui Greet,** director of vocational training at Parker School District and secretary-treasurer of the Greenville Textile Club, Greenville, S. C., has resigned his office with the club after serving for 22 years. Officers of the Greenville Textile Club elected at a recently meeting includes **William H. McCall,** of Southern Weaving Co., president; **Charles Tidwell,** superintendent of Duncan Mills, vice president; and **D. W. Stevenson,** of the Parker School District vocational department, secretary-treasurer.

***W. F. PATRICK, formerly production superintendent of plant of Belding Heminway Corticelli at Morristown, Tenn., has purchased half interest from Roy Ackerman in Levant Textile Mills, Paterson, N. J. Present partnership is composed of I. J. Rogoff, who will be in charge of sales, and Mr. Patrick, who will head up plant production.***

**Dr. James H. Wakelin** has accepted the post of associate director of research for the Textile Research Institute and the Textile Foundation, Princeton, N. J. He was at one time senior physicist for B. F. Goodrich Co. and lately with Engineering Research Associates in Washington. He will give particular attention to the recently inaugurated international wool research project of the institute and the foundation's project on resilience sponsored by the Office of Naval Research.

**Henry S. Rosenthal,** for the last 22 years with S. Stroock & Co. Inc., Newburgh, N. Y., except for 2½ years with the Office of the Quartermaster General, has left the Stroock organization, where he specialized in men's wear styling and selling, to join Royston & Co. Inc., in charge of the men's wear division. His associates, Maurice Halpern and William S. Dean, also were with the Stroock organization until May 1945, when they left to manage their own mill at Manayunk, Pa.

**A. V. Caufield,** who has been operating superintendent of Kilburn Mills, New Bedford, Mass., for the last 6½ years, has been appointed to di-



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## NEWS ABOUT *Men*

(Continued)

rect charge of the Irene Mills, of Taylorsville, N. C., one of the Gurney units.

**Frederick C. Holler** has joined the staff of the Institute of Textile Technology, Charlottesville, Va., as a member of the physical chemistry department. A native of Columbia, S. C., and a graduate of the University of South Carolina, he is an applicant for a PhD degree this June at the University of Virginia.

**Charles M. Epstein, Jr.**, has been elected vice president and **John D. Sicher**, secretary of Liberty Throwing Co., New York, N. Y., at recent meeting of board.

**Albert Ruth**, vice president; **Harry Nadel**, vice president; and **Arnold Voltmann**, director and sales manager, have been appointed as standing executive committee of Bloomsburg Mills, Inc., Bloomsburg, Pa. **James P. Marion, Jr.**, will act as secretary of committee.

**Paul Groover**, general manager, cotton and rayon division, Lyman, S. C.; **Webster E. Plaistead**, general manager, worsted division, Lawrence, Mass.; and **James Diephuis**, general merchandise manager, worsted division, New York, N. Y., have all been named vice presidents of Pacific Mills, Boston, Mass.

**F. A. Jenckes** has been elected vice president of Burlington Mills, Greensboro, N. C., and will continue in charge of coordinating production of filament-yarn fabrics.

**William J. Erwin** will become vice president and director of Riegel Textile Corp. and general manager of company's Ware Shoals, S. C., division, effective Jan. 17. Mr. Erwin succeeds **W. C. Summersby**, who was recently named vice president of Springs Cotton Mills. Now vice president of J. P. Stevens & Co., Inc., and executive officer of its Republic Div. at Great Falls, S. C., Mr. Erwin joined Republic in 1929.

**Joseph Dolphin**, formerly mill manager, has been appointed vice president in charge of production of Canadian Cottons, Ltd., Montreal. **MacMillan Boyd**, general manager, becomes vice-president in charge of sales, and **E. R. Suttie**, vice president in charge of personnel.

**James B. Stone** has been appointed general manufacturing superintendent of Bigelow-Sanford Carpet Co., Thompsonville, Conn., to succeed **William C. Fuge**, veteran of carpet industry, who retired Jan. 1. Mr. Stone has been special assistant to **James Jackson**, plant manager, since April 1948, when he joined company.

**J. A. Swainbank** has resigned position with Dan River Mills where he was employed as textile engineer and adviser to management. He joins Scheuer & Co., New York, N. Y., where he will be concerned chiefly with fabrication and technical textile problems.

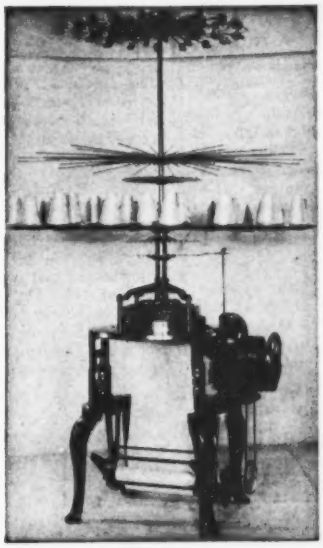
**J. Saunders Williamson**, of Greensboro, N. C., former purchasing director and assistant vice president of Burlington Mills Corp. has been named southern representative for United States Textile Machine Co., Scranton, Pa.

**Arthur Crossley** is now general superintendent of Guild-Pinecrest Mills, Inc., Linwood, Mass. He was formerly manager of Pinecrest plant. He is assisted by **H. Paul Vanasse**, superintendent of Northland Mills and **Charles E. Hughes**, superintendent of Pinecrest Mills. Mr. Vanasse was formerly assistant supervisor in Laconia Mills and Mr. Hughes was with Howard-Arthur Mfg. Co., Fall River, Mass.

**Sheldon Van Vliet** is joining Greenwood Cotton Mills, Inc., Greenwood, S. C., as rayon technician. He will be principally engaged in quality control of Greenwood's line of spun and filament rayon fabrics. Mr. Van Vliet has been with Colonial Mills for last 16 years, and previously was with Wellington Sears Co.

**James H. Johnson** has resigned as equipment design engineer at Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., to become manufacturing engineering manager for Roxbury Carpet Co., Saxonville, Mass.

**William A. Lang** will retire Mar. 3, from active management of Edwards plant of Bates Mfg. Co., Augusta, Maine, following month's vacation. **Harold V. King**, general manager of company's Hill and York divisions, assumes responsibility for Edwards division



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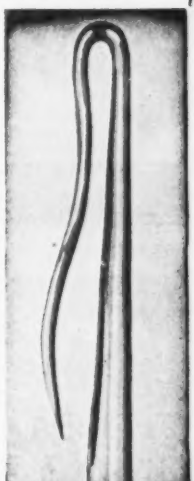

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***Deep, accurate, immediate moisture content readings***

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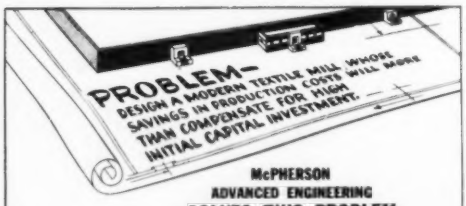
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WOOL SILK COTTON

WATSON-WILLIAMS MFG. CO. Millbury, Mass.


## NEWS ABOUT *Men* (Continued)

and becomes its plant manager. Mr. Lang has spent 48 years in cotton textiles.

**Paul Lazare,** formerly head of Duplex Fabrics, Inc., Burlington Mills, California subsidiary, will be in merchandising field for company in New York, N. Y. **Charles Finlayson,** Mr. Lazare's former assistant, will become officer in charge of California office.

**Alfred A. Benson** has retired as agent of Atlantic Mills, Stottville Div., of A. D. Juilliard & Co., Stottville, N. Y. after 40 years association.

**Clyde W. Scott,** manager of Bemis Bros. Bag Co. Kansas City plant for last 30 years and member of company's board of directors since 1926, has retired. He will be succeeded as manager at Kansas City by **Howard L. Bayne.**

**Arthur Tousignant,** for past year associated with Hartsville Cotton Mills, Hartsville, S. C., has become agent for Spofford Mills, Wilmington, N. C. He was first general manager of Spofford Mills when company was organized about 20 years ago.

**Harrison C. Givens, Jr.,** has been made assistant manager of Celanese Corp. of America, Cumberland, Md. He has been associated with plant since 1933 and has been personal assistant to **Fred T. Small,** vice president and plant manager.

**A. V. Caufield,** formerly operating superintendent of Kilburn Mills, New Bedford, Mass., has joined Gurney interests and will move to Gastonia, where he will be in charge of operations at Irene Mills—one plant in combine located at Taylorsville, N. C.—and will be available when needed at other plants controlled by R. J. Gurney.

**George F. Bridge** has been appointed plant manager of York Div. of Bates Mfg. Co., Saco, Me. **W. Harold Deplitch** will succeed Mr. Bridge as director of cost and control department. Mr. Deplitch will also be assisted by **H. Armand Picard** in charge of costs and **Elwyn A. Thomsen** in charge of time and motion study.

**G. B. Faigle** has become traffic superintendent of Arlington Mills, Lawrence, Mass., succeeding **C. C. Chadwick,** retired.

**J. D. Sheppard** has become manager of Hannah Picket Worsted Mills, Rockingham, N. C.

**T. S. Crow** has become overseer of carding of acetate and worsted division of Spun Fibers, Inc., Whitnel, N. C. He was formerly overseer of carding at rayon division of Mooresville Mills, Mooresville, N. C.

**Frank Decker** has become purchasing agent of chemicals for Kilburn Mills, New Bedford, Mass.

**R. H. Dickinson,** formerly superintendent of Clark Thread Co., unit at Acworth, Ga., has been appointed superintendent of Clark Thread Co. unit at Albany, Ga., and has been succeeded at Acworth by **L. W. Flynn.**

## OBITUARY

**Robert William Boys,** 79, a leader in the textile industry for over a half century, died Jan. 27 at his home in Tuxedo, near Hendersonville, N. C. He was president and treasurer of Green River Mills. He was a native of Manchester, England, and came to the United States in 1893. He was connected with New England and Canadian textile interests, being with Farr Alpaca Co. until 1933 when he bought the Green River Mills.

**John Howard Draper,** 65, vice president of Draper Bros. Co., Canton, Mass., died Dec. 17 in West Palm Beach, Fla. aged 65 years. He had been associated with the company for the last 45 years.

**William E. Mahoney,** 57, president and treasurer of Premier Thread Co., Central Falls, R. I., died at Pawtucket, R. I., on Dec. 31. He founded the company in 1921; was also secretary of the Narragansett Wire Co., Pawtucket, and a member of the board of directors of the Thread Institute.

**John F. Yare,** 60, president of Glenn Woolen Co., Norwich, Conn., died Jan. 5 at St. Francis Hospital, Hartford. Born in Scotland, he came to the U. S. in 1903 and was

*The Weaver's Friend*

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KEEVER SALES - SERVICE MAN
On Slashing Problems

CHARLES C. SWITZER
Division Manager
Greenville, S. C.

F. M. WALLACE
Birmingham 9, Alabama

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KEESTAR KEE PRODUCTS

# Victor MILL STARCH

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Plant and Home Office, Columbus 15, Ohio

## TENTERING and DRYING MACHINERY

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McGraw-Hill Textile Catalogs

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RARITAN, NEW JERSEY

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WRITE US FOR
SAMPLES AND
QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
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ALL STEEL **ECONOMY** **BALING PRESSES**
ALL SIZES FOR ALL PURPOSES
*LARGEST LINE BUILT IN U.S.A.*
ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.
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AMERICAN...the yarn for you, runs more efficiently, produces a finer product, easier to sell...more profitably

American Yarn & Processing Co.

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The yarn conditioning system used by cost and quality-conscious mill men

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For use on rayon, cotton and woolen material.

Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

For information address

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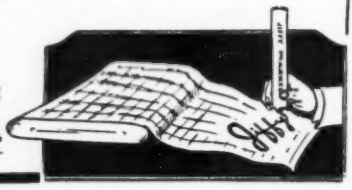


## NEWS ABOUT *Men*

graduated from Lowell Textile School.

**Charles H. Eames,** 74, for 27 years president of Lowell Textile Institute and a foremost figure in the development of textile education, died at his home in Billerica, Mass., Jan. 30. He was graduated from M.I.T. in 1897; and, after a period in electrical engineering, he entered the field of education in 1905 when he became professor of mathematics at the then Lowell Textile School. He succeeded the principal, W. W. Crosby, on Mr. Crosby's retirement in 1907. In 1918, Mr. Eames was given the title of president. Under his direction Lowell Textile developed from a trade school into an engineering college. Mr. Eames became president emeritus in 1945, when he was succeeded in the active office by Kenneth R. Fox.

**Louis A. Olney,** 74, for 47 years head of the chemistry department of Lowell Textile Institute, Lowell, Mass., died at Jacksonville, N. C., on Feb. 11 as the result of an automobile accident in which his wife also lost her life. He retired his professorship in 1945. Dr. Olney was president of the Wonalancet Textile Co., Lowell, and of the Howes Publishing Co., New York. He was also directing editor of the *American Dyestuff Reporter*. Dr. Olney instigated the founding of the American Association of Textile Chemists & Colorists in 1921, was its president from 1921 to 1927 and was lately its president emeritus. He was a recipient of the Olney medal awarded annually by AATCC. He was a 50-year member of the American Chemical Society.

**Albert E. Cluett,** 76, died Jan. 3. For many years he was associated with Cluett, Peabody & Co., Inc., having been secretary and vice president.

**W. Wallace Kemp,** president of C. M. Kemp Mfg. Co., Baltimore, Md., died recently. He succeeded his father in that office in 1912 and is holder of many patents including those covering improved methods for singeing textiles.

**William H. Rihl,** sales engineer for Proctor & Schwartz, builders of industrial drying and textile machinery, Philadelphia, died Dec. 29. Last year, he completed 50 years of service with the company.

**Laurence G. Meads,** formerly president of Aridye Corp. and since 1946 president of Murphy Paint Div. of Interchemical Corp., died in New York on Jan. 12.

**Roland A. Thayer,** 78, Woonsocket, R. I., civil engineer and connected with Lockwood Greene Engineers for many years, died Jan. 3. He engineered the construction of Nyanza Mill, Woonsocket, and the Branch River Wool Combing Co. plant in Union Village.

**John A. Eberly,** 64, head of the firm of the same name which manufactures needles and specialties for knitters at Reading, Pa., died Jan. 11.

**Albert C. Clifton,** 69, Waco, Tex., chairman of the board of Texas Textile Mills, died recently.

**John Rosenfeld,** 59, president of Eskimo Knitting Mills, Philadelphia, Pa., died Dec. 30.

**Burl J. Bandy,** pioneer chenille manufacturer of Dalton, Ga., died recently. At the time of his death, Mr. Bandy was owner of the Southern Craft Co., Inc., chenille plant, Rome, Ga., and Bartow Textiles, Inc., Cartersville, Ga.

**John R. Newton,** 55, president of Primrose Tapestry Co., Inc., Rome, Ga., and formerly a textile manufacturer of Philadelphia, died Dec. 31.

**Henry Stone Favor,** 74, general manager and director of Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I., died Dec. 29.

**Edward E. Langshaw,** 82, brother of the later Walter H. Langshaw, founder of Dartmouth Mfg. Co., and himself an executive of that company until it was liquidated several years ago, died recently in New Bedford, Mass.

**Ralph R. James,** 60, executive vice president and manager of Roanoke Mills, Inc., Roanoke, Va., died Jan. 24. He became superintendent of Josephine Mills, Cedartown, Ga., at the age of 18.

**Frank N. Bradley,** 80, generally regarded as the dean of Worth Street, died Jan. 2, the day following his retirement from Taylor, Pinkham & Co., Inc. Mr. Taylor had been associated with Taylor, Pinkham & Co., and its predecessors for more than 66 years.

# SEARCHLIGHT SECTION

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*NEW ADVERTISEMENTS received by March 17th will appear in the April issue, subject to limitation of space available.*

## RAYON WEAVING MILL SUPERINTENDENT WANTED:

A well established and progressive textile organization, having several mills in operation, has an opening for a competent mill superintendent at one of its mills weaving high quality rayon and acetate crepes, satins, etc.

We are interested in a man with good background and practical experience with high quality production mills.

Only top notch men who have made good in the mills equipped with the XD Draper and C & K S-8 looms will be considered. This is an excellent opportunity for the well qualified man.

Our present personnel know of this advertisement. All communications will be treated in strict confidence.

P 8001, Textile World
330 West 42nd Street, New York 18, N. Y.

*REPLIES (Box No.): Address to office nearest you*
*NEW YORK: 330 W. 42nd St. (18)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*

### POSITIONS VACANT

WANTED: TEXTILE Technologist with prior experience in textile plant laboratory and finishing department to execute phases of research in finishing textile fabrics. Experience in cotton textiles preferred but wool or synthetic experience will be considered. Prefer Younger man with creative imagination and ability to carry out newer ideas and techniques. Contacts with industrial, technical and scientific groups afforded. Opportunity to develop along technical and managerial lines. College chemistry or textile school background desired. Position in Philadelphia area. Statement as to salary expected and to prior training and experience to be furnished. Enclose snapshot or passport photograph. Write P-7220, Textile World.

TIME STUDY Man wanted. Must be young. Must be college graduate. P 8000, Textile World.

CORDUROY FINISHER, must be thoroughly capable and experienced; to develop the dyeing and finishing of corduroys and velvets. Excellent opportunity for the right man to connect with a well established company. Replies held confidential. Write P-8092, Textile World.

### SELLING OPPORTUNITY OFFERED

NEW CONCERN manufacturing porcelain and wire thread guides desires two representatives now handling other lines to the textile trade on a commission basis. New England and Pennsylvania territories. RW 7893, Textile World.

### POSITIONS WANTED

HOSIERY MAN capable of supervising mill, thorough knowledge of seamless hosiery machines, looping and finishing. Mechanical engineering background. Acquainted with modern methods, reference. Age 44. PW 8062, Textile World.

TEXTILE SCHOOL graduate 20 years experience as foreman and superintendent in silk, rayon and cotton wishes position in Phila. or vicinity. PW 8007, Textile World.

### PATENT FOR SALE

**New Bunch Builder**
patent for sale. Highly successful in mill where developed Versatile adjustment. W. H. Buckner, P. O. Box 373, Starkville, Miss.

### SPECIAL SERVICE

**S-8 Loom Service**
We will save you many months of worry and troubles, with our specialized trained mechanics. A few open dates. SS-7766, Textile World.

### MACHINERY SALESMAN WANTED

Long established and well known company manufacturing machinery for hosiery knitting and yarn manufacturing industries has openings for a couple of capable salesmen with contacts. Write, giving experience, territory covered and lines now handled.

SW-8107, Textile World
330 West 42nd St., New York 18, N. Y.

*POSITION WANTED*

### PLANT MANAGER

Capable and energetic Superintendent Textile graduate, with wide experience on colored goods, including rayons and blends wants to make new connection with progressive organization. Good manager of help, well experienced in cost and production control, as well as styling and production of new goods.

PW 8067, Textile World
330 W. 42nd Street, New York 18, N. Y.

### TRICOT EXPERT

Thoroughly experienced with construction and operation of Tricot Machines, and in the making of patterns.

PW 7950, Textile World
330 West 42nd St., New York 18, N. Y.

### POSITION WANTED

MANAGER or SUPERINTENDENT of cotton mill. Textile graduate with 20 years' experience in cotton manufacturing from yarns to finished fabrics. Efficient mill superintendent and labor manager. Cost, quality, production and maintenance minded. Age 40, married, thoroughly dependable. Excellent references. Replies held confidential.

PW-8048, Textile World
330 West 42nd Street, New York 18, N. Y.

### Worsted Executive
### Plant Manager or Superintendent

Interested in making a change. 25 years manufacturing and managerial experience. Men and Womens wear including selling. Aggressive. Can travel. Married.

PW 8096, Textile World
330 West 42nd St., New York 18, N. Y.

## MEN WANTED

### POSITIONS OPEN

We can place: MANAGERS and superintendents elastic and non-elastic fabric mills; worsted cloth and yarn mill managers and superintendents; manager upholstery fabric weaving plant; woolen yarn mill superintendent; pressed felt mill superintendents and assistant superintendents; superintendent rayon weaving mill; printing superintendent and rayon loom fixer for Mexico; rayon technician; worsted cloth mill designers; assistant superintendent sweater mill; assistant superintendent coarse woolen yarns; textile school graduate experienced in carding and spinning, synthetic fibres, willing to travel part of time.

OVERSEERS FOR FOLLOWING DEPTS: make-up for bleaching, dyeing, and finishing plant; woolen carding, 3rd shift; jig dyeing, flat goods; woolen finishing and dyeing combined; finishing (rayon); vat dyeing; box dyeing; rayon-cotton boss dyer; general overseer carding and spinning, blended yarns; worsted yarn dyeing; worsted scouring, carding and combing; worsted spinning; Platt mules, and ring spinning; worsted and woolen finishing; boss pickers and overseers for garnetting and picking.

SECOND HANDS FOR FOLLOWING DEPTS: cotton and woolen carding; weaving, rayon and cotton fabrics; cotton cloth room.

MECHANICAL ENGINEERS; master mechanics; plant engineers; designing engineers and project engineers; industrial engineer; chemists and chemical engineers.

TIME STUDY MEN; cost accountant; textile school graduate dyestuffs laboratory; throwing technician, nylon plant; salesman nylon and silk threads.

FIXER, Lamb and Brinton flat machines; cotton loom fixer for trouble shooting; woolen, worsted, cotton and rayon loom fixers; full fashioned hosiery fixer; cotton card grinder; fixers Axminster seamless and Wilton jacquard carpet looms; mechanic, Brinton and Supreme.

We invite correspondence (Confidential) with executives seeking new positions and with employers seeking new personnel.

**CHARLES P. RAYMOND SERVICE**
Incorporated
Over Fifty Years in Business
**294 Washington St., Boston 8, Mass.**
*Telephones:* Liberty 2-6547—2-6548

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Suite 448, 815-15th St., N. W., Washington 5, D. C.

Additional Positions Vacant & Business Opportunity Advertising on page 290

## PLANT MANAGER

A progressive firm wants a manager for its new upholstery fabric weaving mill in the South, to be equipped with 150 automatic Crompton & Knowles Jacquard looms. Must have intimate knowledge of all phases of Jacquard upholstery fabric manufacturing and must have personality to supervise and work with people.

Attractive position for the right man.

P-7891, Textile World
330 W. 42nd St., New York 18, N. Y.

## FOR SALE

## Operating Fancy Goods Textile Mill

### Synthetics — Cotton — Spuns

4 x 4 C and K Jacquard looms complete with extra parts
Wide width C and K Dobby automatics complete with extra parts
Wide width C and K 4 x 4 Box looms complete with extra parts
Complete auxiliary equipment including Card Cutting—Lacing—Repeater—Reeling—Warping—Quilling—Examining Machinery
*Good location—Excellent labor conditions*

**Priced for immediate sale—All inquiries invited**

BO 8073 Textile World
330 West 42nd St., New York 18, N. Y.

## FLUID TREATMENT OF SINGLE STRANDS

**MERCERIZERS, YARN DYERS, SYNTHETIC PROCESSORS**

**ATTENTION!**

A group of patent applications involving a new process for high speed fluid treatment and drying of single strands without tension is available for sale or license.

*Write for details.*

B.O. 7707, Textile World
330 West 42nd Street, New York 18, N. Y.

## FOR SALE

a complete woolen spinning plant in operation sifted up for spinning carpet yarns, located about 100 miles from New York City.

A complete fine yarn plant with six sets of cards and mules to follow located about 200 miles from New York City.

BO 7970, Textile World
330 W. 42nd St., New York 18, N. Y.

## Progressive rayon weaving mill in Pennsylvania wants young textile school graduate as quilling foreman.

Will be offered the necessary training for the position which carries good prospects for future advancement.

P 7937 Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

## COMPLETE RAYON AND SILK THROWING PLANT

Now in operation. 10,000 Sq. feet. 3 years lease. Located in New Jersey—near Manhattan. Owner leaving states.

B.O. 7858 Textile World
330 W. 42nd St., New York 18, N. Y.

## WANTED

## SALESMAN WANTED

Chemical Company wants a Top-Notch Salesman with thorough knowledge of the Weaving and Throwing of Rayon and Acetate and Silk Fabrics. To solicit business on Sizing and Throwing Compounds. Preferably man with Chemical Background. Will offer Interest in Business to right party.

S.W.-7556, Textile World,
330 West 42nd Street, New York 18, N. Y.

## WANTED

2 or 3 No. 44 Universal Rotoconers with cast iron traverses, double slubbing and paraffin—

Whitin Schweiter Automatic Filling Winders with a total of around 36 spindles to handle 8" Automatic W3 Loom Bobbins, Up to 20 W3 C & K looms 82" looms.

***All these machines to be used but in very good condition.***

**LESTER & BURTON LIMITED**
251 Sorauren Ave. Toronto, Canada
*Telephone—Melrose 5764*

WANTED:

## SCOURING BOWLS,

WOOL,

3, 48" wide, 16' long,

*preferably Sargent.*

W-7947, Textile World
330 West 42nd Street, New York 18, N. Y.

## DYEING & FINISHING Wanted

Large Converter requires Dyeing and Finishing Velvets, Corduroys, etc. Quantity basis; steady supply. Valuable connection offered right party. Give details of equipment, capacity. Confidential.

CW 8095, Textile World
330 West 42nd St., New York 18, N. Y.

## DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

**NEW ENGLAND PRODUCTS CO.**
91 Oliver St. Boston, Mass.

WANTED

## Small Rayon Weaving Mill

C&K 4 x 4 Box Looms, 76 to 84" reed space
*Will also consider purchasing 24 of these looms. Detailed offers*

W-7798, Textile World
330 West 42nd Street, New York 18, N. Y.

## WANTED

Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

Box 1222
1474 Broadway New York 18, N. Y.

## WANTED-CHEMICALS

Dyes—Colors—Pigments
Oils—Waxes—Drugs
By-Products—Wastes—Equipment

**CHEMICAL SERVICE CORP.**
80C Beaver St. New York 5, N. Y.

## WANTED

1 set 10 to 15 Stainless Steel Dry Cans, 60" or wider.

1 Hydraulic padder, 60" or wider.

W 8144, Textile World
330 West 42nd St., New York 18, N. Y.

Have number of Deliveries Saco-Lowell 5-Roll Drawing, Cushion Top, with Lappers, wish to trade for 4-Roll Conventional Drawing with Cushion Top, now in operation. Reply to

T 7918, Textile World
330 West 42nd St., New York 18, N. Y.

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Whether your mill is in Pawtucket or any textile center anywhere in America—you're as near to ◂MLC▸ as your telephone. A call brings you details on machinery and equipment of CERTIFIED VALUE, backed by our years of reputation and experience in the textile field.

HONOR ROLL

LEADING TEXTILE CENTERS OF AMERICA

PAWTUCKET, R. I.

"If I can't make as good yarn as they do in England", said Samuel Slater in 1790 when he installed the Arkwright machines in Pawtucket, "I'll throw the whole thing over the border!" At first, power was supplied by a wheel propelled by an old negro. Cotton was laid by hand; and it was Mr. Slater's wife who conceived the idea of making thread out of cotton. Slater was successful from the first. The War of 1812 nearly ruined Pawtucket's industry—but today it is high up in the list of the great textile producers of America.

"Certified for Leadership"

ALL ◂MLC▸ "Certified" Opportunities

No. 9 of a Series

1—18' Rusden Ager, 52" max. cloth width, with hot water heater, motor drive
1—72" C & M 2-cylinder Brushing machine
1—39" Textile 5 Roll Calender
1—41½" Knit goods calender, stainless steel rolls with motor Reeves drive
1—50- 3-roll Textile Hydraulic Calender with pump and accumulator, motor driven
1—44" 2-roll Schreiner Calender
1—50" 4-roll Rolling and Chasing Calender
1—46" 7-roll Textile Hydraulic Calender
1—47" 3-roll Heavy Duty Friction Calender, motorized
1—51" 11-bowl Hydraulic Chasing Calender, 3 chilled iron steam heated rolls, 7 cotton rolls, one cast iron roll
2—New 3-cyl. Set of 60x60 D&F Cards, with 25 breast, Bramwell feed, double apron, tape condensers
5—C&M Flock Cutters
3—48" D&F Rub Condensers, Double Bank, Double Apron with Spool Racks
1—54" x 60" D&F 2-cylinder Iron Shoddy Cards with feeders
1—65" C&M Dewing Machine, motor driven
1—60" Windle 3C Doubler, motor drive
1—64" P&W Doubling & Rolling-up Machine with clock
1—Set of 31-40" face Butterworth Dry Cans
1—Set of 21-59" face Vertical Copper Dry Cans with motor, Reeves drive
1—Set 30 copper Dry Cans, 23" x 123", in 3 vertical stacks
1—40" Schofield Box Duster with fan
1—48" Schofield Auto. Box Duster
1—Morrison 16 string s/s Dye Beck
1—96" P&S Loop Dryer
2—48" V. VL Stainless Steel Dye Jiggs motor driven
3—52" Werner S/S lined Die Jiggs
1—Set 8 Textile Vertical 48"x23" Copper Dry Cans
1—36" C&M Duster
1—7' D&F Iron Cone Duster with Feeder
7—18", 26", 32", 50", 60" Extractors.
3—40", 42" E&H Flat Folders with take-up stands
1—Rodney Hunt M3, 2 string fulling mill, belt driven
10—40", 65" card and Napper Grinders
1—83" Roy Napper Roll Grinder
4—3-ton Kiers, motors, pumps and heaters
100—10" Draper Model K 20 Har Dobby Looms
99—45½" reed speed space Model E Draper Automatic Looms with lacey tops 3 bank stop motions, warm take-up, belt driven
50—44" cloth width Draper Mod. E Auto. Rayon Looms, 4 harness cam motions, motor driven, rebuilt 1947
40—47½" r.s. Draper Model K 20 harness Dobby Looms
35—52" b.s. C&K 2x1 non-auto. Silk Looms, 16 harness, motor driven
17—52" r.s. C&K 2x1 Auto. Silk Looms, 16 harness, motor driven

PRINTING EQUIPMENT
2—NEW 60" R. B. F. 6 Color Printing machines suitable for large pattern work
2—NEW 50" R. B. F. 12 Color Printing machines
1—Used 64" R. B. F. 8 Color Printing machine
1—Used 54" Werner Single Color Printing machine

1—60" r.s. C&K 4x4 Looms, 20 harness dobbies and 1304 hook Jacquards, motorized
3—60" P&W 60 & 100 yd. Measuring Machines, belt driven
1—70" King & Gerber Tubing Machine with Veeder-Root counter
2—2"0 SF.J.&B. 17¾ Gn. Mules
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle J.&B. 2" Gauge Mules
4—New 360 Sp. D&F Mules, 2½" gauge
2—360 sp. D&F Mules, 2½" gauge, 1946
7—61", 66", 72", 80" Single & Double Acting Nappers.
1—76" 3-roll Mangle

W-3 LOOMS AND SUPPLIES
12—New 72" between swords W-3 C&K 4x1 box, 25 harness Looms
4—92" C&K W-3 Looms, 25 harness Also shuttles, 8¾" 3-ring Bobbins
5600 Spindle Cotton Mill Balance on 2/40's Combed Yarn
9500 SP. Cotton Mill with 70 Draper Broad Looms
75—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors. Also various size Rebuilt Motors

COMPLETE MILL UNIT PROFIT OPPORTUNITIES
- 3—Six to Fourteen Set Woolen Yarn Mills
- A Woolen Piece Goods Finishing Plant
- 3—Worsted Units
- 6—Cotton Mills, 3,000-100,000 Spindles
- 195 Looms Narrow Fabric Weaving Plant for Ribbons, Tapes and Labels. Complete with Warping, Dyeing and Finishing Equipment
  400 Needle Hosiery Mill
  30 Loom Label Weaving Mill

1—30 x 30" Mezerra Wool Opener
1—48" D&F 2-cyl. Wool Opener with Feeder
7—52", 65½", 66", 70", 86" Voelker and Gessner, single and double bed Rotary Cloth Presses.

1—48" C.D. Sargent Burr Pickers
58—43" r.s. Draper Model X Looms, with 39" sand rolls, Brown 4 harness tops, motor Driven
12—70½" r.s. C&K 4x4 Looms, 25 harness, motor driven
18—82" C&K 4x1 Auto. Looms, 16 harness, motor driven
1—Schofield Lumber
1—48" C&K 4x4 box Loom, 25 harness, belt driven, friction clutch
17—54½" C&K Box 20 & 25 Harness Dobby Looms
2—74" Heavy Duck Looms, roller top
14—82" C&K 2x1 automatic Looms, 8 harness cam motion, motor driven
8—100 C&K 2x2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
6—110" C&K 4x4 Box Looms, 25 harness, belt driven
20—C&K 22' Ribbon Looms with intermediate gem heads, belt driven
3—48" & 54" Fearnaught Pickers
1—66" Rodney Hunt 2-roll Padder, motor driven, 1947
1—Rodney Hunt Acetate Presetting Equipment
4—45" 2 and 3 roll Padders.
1—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92", 96", and 100" D&F Pin Type Reels, with creel, back stand, neck reed, warp reel beamer and warp compressor
1—50" Hermas Shear with C&M Stitcher
1—63" Textile Finishing 4-burner Gas Singer
1—117" 4-burner Singer, air guiders, 2-roll quetch box
8—New 120 sp. D&F 6¼" gauge Spinning Frames
11,268 sp. Mason, Whitin, F&J and Saco-Pettee 2¾" and 3" gauge band driven Spinning
3—60" P&W Single Blade Woolen Shears
1—66" Parks & Wilson single Blade Plush Shear
11—66¼" P&W 2-blade Shears
1—76" C&M Double Blade Shears
1—80¼" P&W Single Blade Shears
2—Cameron Model 26 Slitters, motor driven
1—42" Pinching 20-knife Slitting Machine
2—Lowell 2-cylinder Slashers
1—10" Textile Clip Tenter, 60" opening with Housing
1—90" W&J S/S Clip Tenter, 102" opening with Housing
1—60" C&M Single Brush type Tiger
1006 Sp. S.L. 3" Ring Band Driven Twisters
3—80 Spindle Hopedale Band Driven Twisters 4¼" ring, 5½" ga. Belt driven
1—228 sp. Draper 2" ring Wet Twister, with 500 new bobbins
2—8-string Hemmer Wool Washers
7—100 Sp. Foster Model 12 12A 21A Tube & Cone Winders
1—90 Sp. Foster Model 30 Cone Winder

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Woolen Spinning, 5,200 spindles.
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Rayon Weaving, 36 looms.

## OPENING, CARDING & SPINNING

1—Prince Smith Finisher Draw Box, 6 x 12, 12 spindles.
5—Whitin Drawing Frames, 6 deliveries ea., 12" coiler cans.
3—Whitin Drawing Frames, 4 deliveries ea., Model F.
1—Saco-Pettee Drawing Frame, 6 deliveries ea., 12" coiler.
1—Saco-Pettee Drawing Frame, 6 deliveries ea.
2—Woonsocket Bale Breakers.
1—Baling Press with motor.
1—Kitson Breaker Picker with Hopper and Kirschner Beater.
1—Kitson Finisher Picker with Kirschner Beater and condenser.
1—P&W Brusher with motor.
15—Lowell Cards, 40", 12" coilers, belt driven.

## DYEING AND FINISHING

1—Gessner Full Decater, 72", with winder, boiler and vacuum pumps.
1—P&W Semi Decater, 50".
1—Hussong Dyeing machine, 11' long 5' wide, 3' deep, for yarn.
2—Smith-Drum Skein Dyers, 20 arms.
1—Cavagnero Embossing Calender, 60" wide, with motor, automatic rewind.
4—Zepher Extractors, 60" self-balancing, with motor.
2—Tolhurst 40" Extractors, copper, basket.
2—Finishing Starch Mangles, 50".
1—Bolt-Off Unit, stainless steel, 70" wide, 145" long with motor.
1—Verduin Napper, 60" with motor.
1—Palmer Quetsch Unit, 48".
1—V. V. Palmer Unit, 60" wide, with Quetsch, 30' Tenter.
1—Werner Quetsch, 2 roll, 60".
8—Dry Cans, vertical stack, 72" wide, copper.
1—National Loop Dryer, 84".
1—Pebble Embossing Calender, 2 rolls, 51" wide.
2—Steel Tanks, 150 gal.
1—Winsor & Jerauld Tenter Frame, 20' x 60" with motor.

## PRINT MACHINES

1—Rice, Barton & Fales, 48" wide, 4 colors.
1—Rice, Barton & Fales, 48" wide, 6 colors.
1—Rice, Barton & Fales, 48" wide, 12 colors.

## LOOMS

100—Draper Model E, 48" automatic, with motors.
128—Stafford, 45" r.s., motors.
4—Crompton & Knowles, 76", motors.
48—Draper 46" automatic, 2 harness, motor.
16—Crompton & Knowles, 92" r.s., 12 harness.
12—Crompton & Knowles W-3, 72" r.s.
46—C&K 52", 2 x 1 auto., 20 harness, motor.
225—Draper, Model E, 36".
8—Draper, 65½" r.s., motor.
10—C&K, 4 x 4 box, 82", motor.
156—Stafford, heavy, 2 x 1 non-automatic, 54".
100—Draper S-5, 56", automatic.
68—Draper, Model X, 43" r.s.
14—C&K, 82" r.s., 4 x 4 box.
20—C&K 84" r.s., 4 x 1 box, 20 harness.

## WARPING AND WINDING

1—Curtis & Marble Folder, 40".
1—Lowell Slasher, 50" wide, 5' and 7' cylinders, 4 drums, dbl. size box, beam creel and motor.
1—Entwistle Warper, 54" counter and motor.
6—Universal Winders, No. 50.
12—New C&K Dobbies, No. 7 type, 20 harness, dbl. index.
1—Johnson Slasher, 5 can.


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3—PROCTOR & SCHWARTZ Loop Driers, 20'-40' long, M. D.
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1—Butterworth Calender, hydraulic, 7-bowl, 50"
2—WOONSOCKET Nappers, D. A. 82" M. D., 36 rolls
2—C. & M. Shearing Machines, 60" wide
2—PHILADELPHIA Skein Driers
3—Cotton Slashers
15—Sets of Dry Cans, S. S. & Copper from 6 cans to 50 cans; 50" to 144" wide
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2—Warner Jigs, 60" & 70" S. S. ball bearing
1—National Loop Dryer, 8 fan, 2 line, 1946 model
1—Rodney-Hunt 2 Roll Padder—66" wide (1947)
1—TEXTILE AGER, 18' long, 60" wide
2—V. V. DECATORS: 1 BRAND NEW 72" wide
1—Morrison 16 string S. S. Dye Kettle, M. D. (1947)
1—Smith Drum 3 tube Skein-Dyeing Machine (1947)
3—Print Machines, R. B. F. 44" to 62"
1—V. V. Palmer Quetsch—60"
1—V. V. Palmer Quetsch Tenter 45"

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48—C. & K. 100 Draper Mod. D., 50"
72—Draper Model E 47½"
60—Draper Model E 45"
500—Draper Model E 40"
24—WHITIN Spinning Frames, Long Draft
24—WOONSOCKET Cards 40", 12" coilers
2—BARBER-COLMAN Warp Tying-in Machines, Model J16, size J
1—Barber-Colman Tying-in Machine, L. S. (1948)
25—FOSTER Winders
1—WINDERS, Models 101 and 102

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2—WHITIN Cards, 60", 3 cylinder, tape condenser
1—D. & F. Card, 60" 3 cylinder tape condenser
8—D. & F. Worsted Cards, 54" wide, 2 cylinder
*All above cards have iron cylinders
8—D. & F. Spinning Frames, 120 sp., 6½" ga. (1948)
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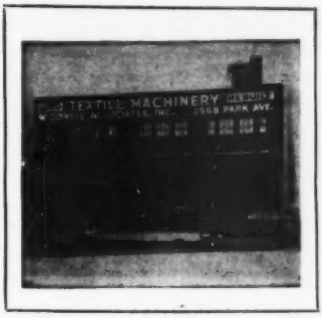


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2—WARPERS, pinless, 107", motorized
4—Abbott WINDERS, model 64, 80 spindles each
4—Foster #101 TUBE WINDERS, 60 spindles each
1—Foster #30 CONE WINDER, 100 spindles, with parallel tube attachments
2—Foster #25 WINDERS, 60 spindles each
8—40" COTTON CARDS, 27" doffer, 12" coilers
50—45" COTTON CARDS, 26" doffer, 12" coilers
7—48" WASTE CARDS, 27" doffer, 12" coilers
32—SPINNING FRAMES, 3¼" gauge, 240 spindles each, L.D.
52—SPINNING FRAMES, 3¼" gauge, 252 spindles each, L.D.
2—TWISTERS, 4½" ring, 100 spindles each
4—TWISTERS, 4½" ring, 132 spindles each
1—SECTIONAL WARPER, H.S., 20", magazine creel

## LOOMS

68—Draper X, 39", motorized
40—Draper K, 40", dobby, belt drive
150—Stafford, 2x1, non-auto., 52½", motorized
42—Draper D, 72", 16-harness, motorized
300—C&K, 2x1 auto., 54" R.S., dobby, motorized
12—C&K, 4x4, 82" R.S., 25-harness, motorized
16—C&K, 4x4, 92" R.S., 30-harness, motorized

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3—NAPPERS, 72"-80", 12-14 roll, S.A.
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1—SCOURING UNIT, raw stock, 54", 5-bowl and dryer
1—SCUTCHER, 72", scroll rolls and detwister, motorized
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4—SHEARS, 60"-66½", double blade
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3—Cashiko wool cards 60" x 54" diameter, 4 cylinder. Complete. 96 end tape condensers. Rebuilt 1944.
1—J & B GP large package spinning mule 2½" gauge 336 spindles.
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1—Set of 6 copper cans, vertical, Reeves & motor.
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4—Dye Jiggs, 50", SS lined
1—Extractor, 48" Tolhurst
2—Fulling Mills, #10 Hunter
68—Looms, Draper 47" RS Model "X", 1937
56—Looms, Draper Model "E", 40", mtr. drvn.
48—Looms, Draper Model "E", 30", mtr. drvn.
259—Looms, Draper Model "K", 40" looms, 1929
21—Looms, C&K, C4, 60", 4x1 mtr. drvn. auto.
100—Looms, Draper Modified "D" 37" RS, 1926 mtr. drvn. duck
12—Roving Frames, H&R, 1925, 160 sp. ea. 5½" gge. with Casa Blanca long draft
1—Sewing machine, Merrow style 60ABB, on C&M portable stand w. mtr.
4—Shears, Hermas 3 blade, 48"
1—Spinning Frame, S. L., 1926, 228 sp. 2¾" ring, 4 gge.
1—Spinning Frame, Whitin Model F., Lg. Pkg., 1926, 192 sp. 2¾" ring 5" gge.
30—Spinning Frames, 2¾" ring, Band and tape drvn. warp spinning
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40—Winders, #50, Univ. 1936
2—Winders, #101 Foster, 100 sp. ea.

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1—Universal Winder with motor.
1—Hand card cutting machine for jaquard.
4—Jaquard heads.
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2—Curtis & Marble Truslow Blending Attachments.

7—Klauder-Weldon Raw Stock Dyeing Machines, 4000 lbs. capacity.

1—Andrews & Goodrich 72" Raw Stock Dryer, Bramwell Feed, and insulated metal housing.

### CARDING

5—Whitin 50" x 50" 2-cylinder Woolen Cards.

4—Whitin 50" x 48" 2-cylinder Woolen Cards.

6—Platt 51" x 51" 2-cylinder Woolen Cards.

6—Davis & Furber 48" x 48" 2-cylinder Woolen Cards.

50—Whitin R.F. Cards, 12" coilers, 27" doffers.

### SPINNING

8—Whitin Wool Spinning Frames, Model A, Pease Type, 144 spindles, 4½" gauge, 1¾" ring.

5—Whitin Wool, Spinning Frames, Model A, Pease Type, 144 spindles, 4½" gauge, 4—2¼" ring, 1—3½" ring.

78—Saco-Lowell Tape Drive Spinning Frames, 3¼" gauge, 1⅞" ring, 252 spindles.

50—Whitin Tape Drive Spinning Frames, 2¾" gauge, 1-5/16", 1⅝" and 1¾" ring, 240 spindles.

### TWISTING

19—Whitin Tape Drive Twisters, 240 spindles each, 3½" gauge, 1-13/16" ring, motor driven.

14—Fales & Jenks Tape Drive Twisters, 4½" gauge, 3½" ring, 160 spindles, double bottom rolls.

14—Collins Tape Drive Twisters, 4½" gauge, 3½" ring, 152 spindles, double bottom rolls.

1—New All Stainless Steel 4-box Washer or Open Soaper, 72" wide, squeeze rolls individually motor driven and pneumatically controlled.

### WINDING, WARPING & SPOOLING

40—#90 Universal Winders, 20 spindles each, bunch builders.

5—Foster #103 Winders, for wooden cones, 100 spindles, motor driven.

4—Foster #102 Winders, for paper and wooden cones, motor driven.

2—Universal #44 Roto Coners, for wooden cones, motor driven.

2—Universal #60-GF Winders, 96 spindles, for wooden cones.

1—Entwistle High Speed Warper, with 468-end Foster Magazine Creel.

1—Saco-Lowell High Speed Warper, with 462-end Magazine Creel.

1—Entwistle High Speed Warper, with 400-end Foster Magazine Creel.

2—40" Jack Spoolers, for 40 ends.

### SLASHING

1—76" Saco-Lowell 4-section Hot Air Woolen Warp Slasher, 109" headway.

1—Saco-Lowell Slasher, 1—5' and 1—7' cylinder, 64" wide, 109" headway.

### LOOMS

200—Draper Model "E" 40" Looms, 45½" reed space.

48—Draper Model "K" 42" Looms, 81½" reed space, with 20-harness dobbies.

200—Draper Model "K" 44" Looms, 45½" reed space.

90—Draper Model "K" 62" Looms, 67½" reed space.

58—Draper Model "D" 64" Looms, 69½" reed space, with C & K 20-harness dobbies, motor driven.

50—Draper Model "D" 72" Looms, 79½" reed space, with 20-harness dobbies, motor driven.

12—Draper Model "L" 72" Looms, 81½" reed space, with 20-harness dobbies.

28—Stafford Automatic Looms, 76" reed space, 20-harness dobbies, motor driven.

100—C & K 40" 4x1 box Automatic Looms, 48½" between swords, with 20-harness dobbies.

50—C & K 50" 4x1 box Automatic Looms, 56½" between swords, with 20-harness dobbies.

100—C & K 4x1 box Looms, 85" between swords, with Jacquards, motor driven.

16—C & K 4x1 box Looms, 92" between swords, with Jacquards, motor driven.

30—C & K 4x1 box Looms, 112" between swords, with Jacquards, motor driven.

### FINISHING

2—Rodney-Hunt Style M-3 Fulling Mills, motor driven.

1—85" John Heathcote & Sons 6-tier Tenter, 128-yard capacity, with Andrews & Goodrich insulated housing.

2—Butterworth 80" Micro Set Padders, (1 new), rubber covered rolls.

1—86" Padder, 2 rubber rolls, stainless steel tank.

1—Andrews & Goodrich 96" Vapor Loop Dryer, 75-yard capacity.

1—24-Can Butterworth Dryer, new stainless steel cans 23" dia. x 72" face, vertical frames, Johnson joints.

1—17-Can Butterworth Dryer, stainless steel cans 23" dia. v 130" face, vertical frames, Johnson joints.

### MISCELLANEOUS

1—Lummus one-story double box Baling Press.

1—Economy all steel Baling Press, Model No. 60F4S, motor driven.

1—Economy all steel Baling Press, Model No. 654FFS, motor driven.

8—Davis & Furber 80" 36-roll double-acting Nappers, ball bearing, motor driven.

8—Franz Muller 80" 36-roll double-acting Nappers, ball bearing, motor driven.

1—Curtis & Marble single cylinder 90" Napper.

1—Curtis & Marble 42" Cloth Boarding and Measuring Machine, motor driven.

9—Tillinghast Rotary Portable Sewing Machines, foot powered.

7—Metropolitan Binding Sewing Machines, Style 924-CBT-47.

9—Metropolitan Binding Sewing Machines, Style 51-8-CFX.

7—Merrow Sewing Machines, Style 60-BU.

2—Acme Silver Stitchers.

1—New Whitin Model G-4 60 x 60 3-cylinder Card, Metallic Breast, Type E, Hopper Feed.

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## PREPARATORY

2—Sargent 42" Picker Feeds
2—Hardwood 60" Garnett Feeds
1—Hunter 7 section Raw Stock Dryer
1—Sargent 48" Rag Duster
1—D. & F. 7' all iron Cone Duster
1—Schofield 48" automatic Duster (Box)
1—C. & M. 48" Fearnaught Mixing Picker
4—Schofield Hard Waste Pickers 18"x30"
1—Schofield 42" Carding Rag Picker
1—C. & M. 48" Burr Picker with Feed
1—S. F. 36" Lumper, ball bearing
1—Kitson 36" S-L Bale Breaker
1—60" Tape Condenser, double bank
1—Taylor-Wadsworth Backwasher and Dryer

## WINDING

UNIVERSAL #50 & #90 WINDERS REBUILT TO ORDER
2—Universal #45 Winder Heads
2—Universal #8 Winders
1—Foster Model 12, 80 sp. Skein to Cone Winder, Mtr. dr.
1—Whitin 378 Sp. Quiller 2½" gauge
3—J. & B. Jackwinders
1—O. L. No. 20 Hi-Speed Cop Winder
2—Worcester Warp Comp. Spoolers

## WARPING AND WEAVING

1—S. F. Warp Compressor
4—Altemus or Cleveland type Warpers, rebuilt to order
2—Altemus Long Chain Beamers
1—Worcester Cone Creel, elec. stop motion, magazine type, 176 active ends
4—C. & K. 62" 4x1 automatic Looms
12—C. & K. 82" 4x4 Box Looms
75,000—8" automatic Loom Bobbins

## FINISHING

1—Perkins Cloth Piler, 72" traverse
1—Hunter No. 10 Fulling Mill
1—Fletcher 60" Mtr. Dr. Extractor
3—Tolhurst Mtr. Dr. Extractors 72"-96"
1—Butterworth Rope Squeezer
1—C. & M. 170" Rolling Teasel Gig
1—P. & W. 66" Double Shear
1—P. & W. 66" Plush Shear
1—Gessner 66" Heavy Duty Press
1—Voelker 66" Double Bed Press
1—P. & W. 66" 4 cyl. Brush & Sander
1—Yorkshire Crab 72"
1—K. & B. 72" Full Decator
4—Herman, Werner Mtr. Dr. Inspecting Mach. 72"-96" wide

## MISCELLANEOUS

2—Sturtevant No. 2 Pumps
3—Emerson Conditioning Ovens
1—Brown Yarn Strength Tester
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1—6 Roll Calender, 3 iron, 3 cotton rolls, 49" face, 40 H.P. motor
1—3 Roll Heavy Duty Friction Calender (SLK), screw set, 47", 50 H.P. motor, G.E.
1—Proctor & Schwartz 8' loop Dryer, 10 H.P., complete with fans and heaters
1—Weisbach 11 bowl Chasing Calender, 51" face, hydraulic set through compound lever, 13 strand chasing, variable speed slip ring motor, 75 H.P., 5 H.P. motor on hydraulic pump
1—Set of 32 Horizontal Copper Cans, 142" wide, siphon type, removable journals, excellent condition
1—Set 30 Copper Drying Cylinder, 23" x 123" in 3 vertical stacks, 25 H.P., B.T.A. motor
1—Set 30 Copper Cans, 132" wide, horizontal stands, siphoned
1—Set 34 Copper Cans, 50"
5—Bleach House Squeezers, rubber to rubber rolls, 18" x 18"
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1—Schofield 42" "New Type" Rag Picker with 20 H.p. 220/60/3 Motor and Blower. Like New.
1—Hunter 2 Cylinder 48" Wool Opener.
1—C. & M. "Atlas" 36" 12 Bar Picker
1—Schofield Standard Ball Bearing Rag Picker, Motor Drive.
1—S. & F. Standard Ball Bearing Rag Picker, Motor Drive.
1—D. & F. All Metal Standard Ball Bearing Rag Picker, Motor Drive.
1—Butterworth Standard Ball Bearing Rag Picker, Motor Drive.
1—42" Shredder with Breast. Phila. Textile Machine Co.
1—Sargeant 48" Multiplex Burr Picker, Ball Bearing. #834-1928. Rebuilt.
1—Schofield 48" Automatic Duster, V-Belt Drive. Rebuilt.
1—Sargent 8' Duster, V-Belt Drive. All Metal.
1—C. & M. 36" Automatic Box Duster.
1—Whitin "Fisher" Wool Opener.
1—C. & M. 48" Fearnaught Picker, Rebuilt.

### CARDING AND SPINNING

9—D. & F. 60" Tape Condensers. 80 Ends. Double Apron, Double Eccentric, 4 Banks.
5—D. & F. 60" Triple Apron Rub Condensers with 20" Ring Doffers. Quantity of New Leather Aprons for Above.
2—Lindsey-Hyde 50 Sp. 3½" Gauge Skein Winders.
2—Whitin 30 Spindle 4" Gauge Skein Winders.
4—J. & B. "Giant Package" 3" Gauge Mules 320 Sp. 1947.
4—J. & B. 252 Spindle 2" Gauge Mules.
2—480 Sp. Shimmel Mules 47 mm Gauge.
1—Sargeant Yarn Conditioning Machine.

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1—Prince Smith and Sons O.P.S. Three Head Gill Box.
1—S.A.C.M. 1st Passage 4 Head-4 Balls Intersecting Gill Box. 1924. M.D.
1—S.A.C.M. Intersecting Gill Box, 5 Heads-5 Balls. 1924. Motor Drive.

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8—C&K 100" 25 Harness, 4 x 1 Automatic Looms. Motor Drive, 220/60/3
10—C&K 92" 25 Harness 4 x 4 Looms. Motor Drive, 220/60/3
10—C&K 82" 25 Harness 4 x 4 Looms. Motor Drive. 220/60/3. Rebuilt
4—C&K 48" Sample Looms, H. W., 25 Harness, 4 x 4, Motor Drive.
2—C&K 82" 25 Harness Intermediate 4 x 4 Looms, Motor Drive. Rebuilt.
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1—D. & F. 80" Warp Mill
2—Altemus 72" Pin Type Warp Mills
3—#90 Universal Bobbin Winders with Bunch Builders. Motor Drive.
1—Foster #101 80 Spindle Motor Driven Cone Winder.
1—Foster #12-80 Spindle Motor Driven Cone Winder.
1—Foster #30-80 Spindle Belt Driven Tube Winder.

### FINISHING MACHINERY

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1—Rodney Hunt M-3 Fulling Mill. Motor Drive.
1—James Hunter Sample Fulling Mill.
1—James Hunter 8 String Iron Clad Washer.
1—D. Gessner "Jumbo" Press, 66"; Motor Drive, 220/60/3.
1—D. Gessner "Jumbo" Press, 66", Belt Drive.
1—Gessner 72" Double Bed Press, Belt Drive.
1—Voelker 86" Double Bed Press, Motor Drive.
1—P. & W. 90" 18 Roll Single Action Napper, Belt Drive.
1—Woonsocket 80" 36 Roll Double Action Napper, Motor Drive.
2—P. & W. 66" Double Shears, List Saving.
1—C. & M. 12/4 Double Carpet Shear.
1—C. & M. 62"—6/4 Double Carpet Shear.
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1—Thewlis 4 Cylinder Plush Tiger, Motor Drive.
3—2 Cylinder P. & W. Brushing Machines.
1—P. & W. 70" Dewing Machine. Motor Drive.
1—Tolhurst 48" Copper Basket Extractor, #5411. Motor Drive. 550/60/3—7½ H.P.

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1—10 H.p. G.E. 440/60/3 1155 R.p.m.
1—10 H.p. Westinghouse 220/60/3 870 R.p.m.
1—10 H.p. Westinghouse 220/60/3 1160 R.p.m.
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1—10 H.p. Westinghouse 220/60/3 870 R.p.m.
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1—10 H.p. Westinghouse 220/60/3 870 R.p.m.
1—20 H.p. Westinghouse 220/60/3 1140 R.p.m.
1—25 H.p. G.E. 220/60/3 900 R.p.m.
1—7½ H.p. G.E. 550/60/3 1740 R.p.m.
1—7½ H.p. G.E. 550/60/3 1100 R.p.m.
4—5 H.p. G.E. 220/60/3 1800 R.p.m.
1—7½ H.p. Westinghouse 220/60/3 870 R.p.m.
2—5 H.p. G.E. 550/60/3 1140 R.p.m.
1—5 H.p. Westinghouse 220/60/3 1160 R.p.m.
1—3 H.p. G.E. 220/60/3 1730 R.p.m.
1—3 H.p. F-M 220/440/60/3 1740 R.p.m.
2—2 H.p. C-W 550/60/3 1140 R.p.m.
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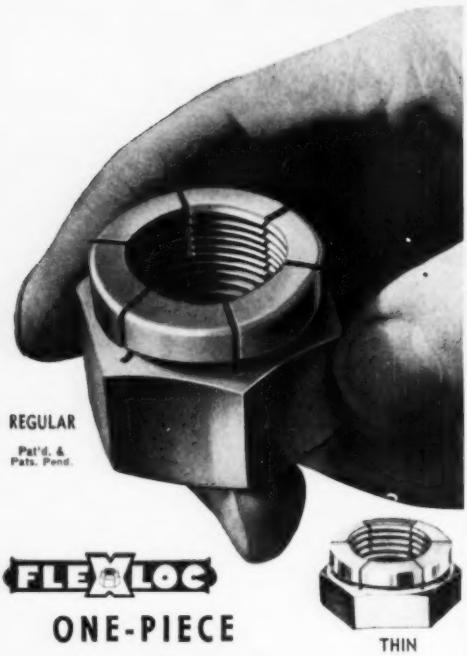


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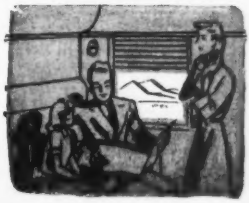

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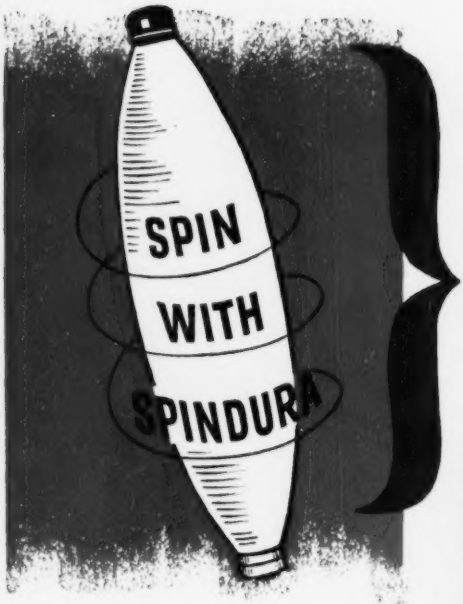


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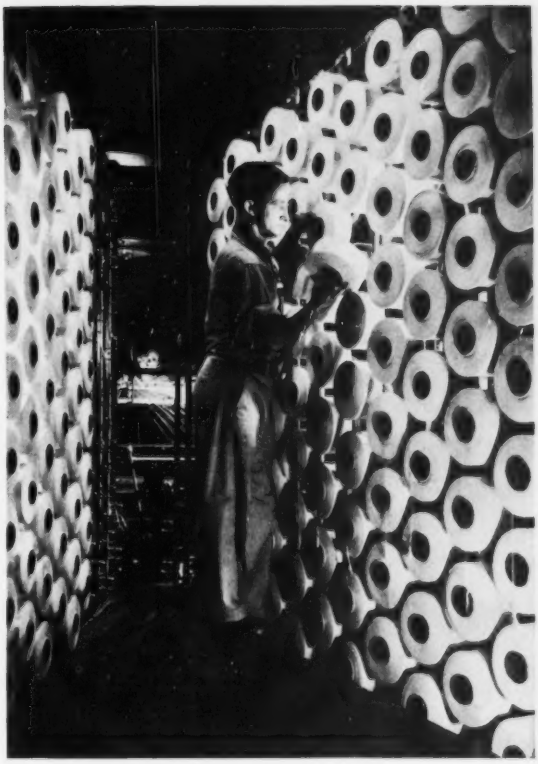

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